# California GARDEN

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*Illustration by:*
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# The Astonishing Pond

By Patt Sigg

"Curiosity killed the cat..." and it nearly got me into big trouble last spring. So intrigued was I with a mysterious pool brimming with stunning white flowers along Freeway 163, I stopped my car! Most anyone knows better than to stop on the shoulder of a freeway. But with noise for cover and camera in hand, I walked briskly and boldly toward the fence, beyond which the bountiful flowers beckoned.

Suddenly, above the freeway drone, an authoritative, yet kindly voice, resounded over a bullhorn, "I hope you have not left your vehicle for any other reason than an emergency." Adrenaline shot through me. I returned to my car even more briskly than I had left it and far less boldly, in hopes my contrite spirit would appeal to a kindly, gentle officer of the law, who had caught me in the act.

A nod and the slightest suggestion of a grin, as the police officer pulled back onto the highway, gave this episode a happy ending.

But my quest had just begun. Not to be dissuaded or even daunted after such a disconcerting experience, I left the freeway at the next exit. By succumbing to some magnetic power of the mysterious pond, I was led to the water's edge.

Ah, the prize! The pool of waxy, waterlily-like flowers in still water, turned my curiosity into sheer enchantment. Ivory towers of petals on sturdy stems seemed to reach for the sun. Tiny white stars drifted by the hundreds to fill spaces between slender leaves relaxing on the water's surface. And to add to the already captivating scene, waves of fragrance filled the air.

What are these flowers? Where did they come from? Are they always here? The library kept the secret hidden and gardening friends had no answers. Natualists shook their heads.

But a phone call brought rain. Mitchell Beauchamp, San Diego author of **"A Flora of San Diego County, California"**, KNEW. "It's **Aponogeton distachyus"**, Beauchamp said without hesitation. "Oh!", I retorted. "Commonly called Cape Pondweed, it is native to South Africa," he continued, "and there's a lot of speculation as to how it got into that area. The most plausible explanation seems to be that plants naturalized after being dumped from an aquarium or fish tank."

Strange, I thought. "That pond, by the way, was formed when freeway construction damned up rain water. As long as winter rains keep water in the pool, the Cape Pondweed grows and blooms," Beauchamp recalled.

He also identified the small floating stars I'd seen as **Callitriche,** or water starwort. Please, how about just water stars?

Upon further search, **Standard Cyclopedia of Horticulture,** by L.H. Bailey, adds still another common name for **Aponogeton distachyus** - Cape Hawthorne. The delicious fragrance of our pondweed so closely resembles that of hawthorn, it was named accordingly. Twenty-two species exist, all tropical or sub-tropical, aquatic herbs. Propagation takes place from offsets or by division. Cape Hawthorn can be grown permanently indoors when properly planted in tubs or or deep pans, according to Bailey. Tropic World Nursery, 26437 North Center City Parkway, Escondido, CA 92026 frequently offers starter plants.

**Hortus Third,** another rich source of botanical information, refers to **Aponegeton distachyus** as Cape Asparagus and adds that in South Africa it is useful as food. The plant was first identified by Carl von Linne (1741-1783) of Sweden, son of Carl von Linne, known as the "Father of Botany."

All of this background may add interest but the intrigue lies in the astounding adjustment made during the plant's seasonal cycle. As pond water evaporates in late spring, plants adapt by going dormant in order to survive long periods of summer heat and drought. Awakened the following year by winter rains that fill this unique habitat, the pond again promises the sweet smelling, satiny beauty of **Aponogeton distachyus,** for all who have eyes to see.

But wait! Leviathans astride monstrous wheels shake the earth under foot. Their huge bodies lumber by in a frenzy of going and coming, dumping drifts of dirt here and there. THE POND! My heart fills with fear. The astonishing pond will be lost forever.

Yes, we need an east-west throughway but, alas, the unfortunate sea of fragrant flowers lies in the path of progress. So be it...the freeway giveth and the freeway taketh away.

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New books donated by publishers, authors, or friends, are reviewed by Mary Lou Orphey, our Book Reviewer, and then placed in the horticultural library of the San Diego Floral Association. We welcome new books and hope you will come in to read them. The library is located in Room 105, Casa del Prado, Balboa Park, San Diego. It is normally open from 10 a.m. until 3 p.m. on weekdays. It is closed on weekends and holidays. The librarian is available on Tuesdays. The library contains many old, rare, new and interesting horticultural books plus a complete set of California Garden magazine from 1909 up to the present issue. Also, we have some horticultural magazines, including some in Russian and in Hebrew languages. The library card file is being put on the computer for reference. Also, a copying machine was recently purchased for the library. Current floral magazines are available for your reading pleasure.

San Diego Floral Association and California Garden need help to do clerical work, mail magazines and renewal notices, work the computer, answer the phone, assist in the library, and sell magazines. If you are interested, call 232-5762.

Visit San Diego Floral Association Library and see the file on garden clubs and new products.

**The deadline for horticultural events and ads for the next issue is July 24, 1987.**

For only $25.00 a year, a **professional business** relating to horticulture can become a member of San Diego Floral Association and be listed in each issue of California Garden magazine as a "Professional Affiliate". This listing would include name, address and telephone number of the business. It is a wonderful opportunity to reach gardeners.

We welcome articles which are both informative and interesting to California gardeners. Persons who furnish article, front cover, photos, sketches, or pictures used in the magazine will be entitled to up to 3 copies of the California Garden magazine containing their contribution, in appreciation. Since we are a non-profit organization, no fees will be paid for articles or pictures. Submit articles double or triple spaced, and include postage if you desire to have your article or photos returned.

The policy listed above was approved by the Governing Board of the San Diego Floral Association on 2 August 1985 and is effective immediately, unless otherwise noted above.

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# HORTICULTURE CALENDAR

*San Diego Floral Association Event

***Free Floral Crafts Instruction Workshop with Colleen Winchell** every Thursday, Casa del Prado, Rm. 105, Balboa Park, 10-3 p.m. Info: 479-6433.

**April through July**

**Artist, Writer and Garden Designer, Karen Kee's "California Cottage Garden"** open Tuesdays 1-3 p.m. at 12819 Selma Court, Poway, CA. Guests welcomed.

***June 16**

**80th Annual Meeting and Pot Luck by San Diego Floral Association.** 6 p.m. Pot Luck $1.00 members, $3.00 non-members. Reservations 232-5672. 7:30 p.m. Installation of officers and "Reconstruction of Historical Gardens through Archaeology with Emphasis on Southern California Rancho Period" by Ann Noah, County Archaeologist. Program free to all.

**June 18-July 5**

**Del Mar Fair**

San Diego Floral Association will have a booth to sell CALIFORNIA GARDEN magazine subscriptions and memberships. The California Macadamia Society will have a display and demonstrate a mechanical nut cracker and husker. Come, see the beautiful floral exhibits.

**June 20, 21**

**San Diego Fuchsia and Shade Plant Show and Sale.** Casa del Prado, Balboa Park, San Diego. Sat: 12-5 p.m.; Sun: 10-5 p.m. Free.

**June 20, 28**

**Descanso Bonsai Society's 17th Annual Bonsai Show and Sale.** Demonstrations and sale of pots, tools, books, etc. Descanso Gardens, La Canada Flintridge, CA 9:30-4:30 p.m.

**June 21**

**Garden Talk - "How Does Your Garden Grow?"** by June Natter. Discussion of bedding plants, vegetables, seeds, cuttings, and houseplants. South Coast Botanic Gardens, Palos Verdes Peninsula, CA.

**June 22 for 12 Mondays**

**UCLA Extension Class, "Planting Design"** taught by landscape designer Michael Kristiansen. It will meet in Room 1343 Franz Hall, UCLA 7-10 p.m. Fee. Details UCLA Ext. (213) 825-9414.

**June 24 - Sep 9 Every Wednesday**

**UCLA Extension class on "Environment and Behavior for Landscape Architecture"** taught by Mary Marzolf, MA. Meets in Room 3117, Bunche, UCLA, 7-10 p.m.. Fee. Details: UCLA Extension (213) 825-9414.

**June 25 for 6 Thursdays**

**UCLA Extension class "Japanese Landscape Architecture: Present and Past,"** Instructor is Norifumi Hashibe, MFA. Meets in Room 1337 GSM, UCLA, 7-10 p.m.. Fee. Details: UCLA Extension (213) 825-9414.

**June 25-September 10 Thursdays**

**UCLA Extension Class "Landscape Construction Applications Seminar".** Instructor Brian Baker of the Peridian Group, Irvine, CA. Meets in Room 3915A, Math Sciences, UCLA, 7-10 p.m. Fee. Info: (213) 825-9414.

**June 26-28**

**UCLA Extension Div. of Landscape Architecture presents its 9th Annual Student Show** at the Market at Colorado Place, 2425 Colorado Ave., Santa Monica with an opening reception free to the public on Friday, June 26, 6:30-9 p.m. Details: Call (213) 825-9414.

**June 27**

**Daylily/Lily Day at American Horticultural Society Hq, River Farm,** 7931 East Boulevard Drive, Alexandria, VA. Display includes over 100 cultivars and over 150 lilies. 10-4 p.m. Fee.

**June 27, 28, July 4, 5**

**Alice Menard's Garden** open for Visitors 9 a.m.-3 p.m. Admission $3.50. 13027 Mapleview St., Lakeside, CA. (619) 443-2400.

**June 28**

**South African Slide Show** presented by Beth and Julius Glogovcson from a gardener's perspective of South Africa. South Coast Botanic Garden, Palos Verdes Peninsula, CA 2 p.m.

**July 3, 4, 5**

**Cactus & Succulent Society of America's Show and Plant Sale.** 1000 displays. Los Angeles State and County Arboretum, Arcadia. 9:30-4:30 p.m.

**July 5**

**San Diego Dahlia Society's Specimen Show,** Casa del Prado, Balboa Park, 1-4:30 p.m. Free.

**July 12**

**Fern Talk and Sale.** South Coast Botanic Garden, Palos Verdes Pennisula, 2 p.m.

**July 12**

**Convair Garden Club's 36th Summer Show,** Casa del Prado, Balboa Park, 1-4:30 p.m.

**July 12**

**Hibiscus Show by the American Hibiscus Society, Ross Gast Chapter,** at the Wild Animal Park in Escondido, CA 11-5 p.m.

**July 19-22**

**Second National Herb Growing and Marketing Conference** at Adam's Mark Hotel, 2544 Executive Drive, Indianapolis, Indiana 46241. (317) 248-2481. Fee.

**July 25**

**UCLA:Royal College of Art Program** with courses in London. The College Campus is in South Kensington. Info: UCLA Ext. (213) 825-9676. Fee.

**July 25, 26**

**Begonia Show and Sale.** Los Angeles State and County Arboretum, Arcadia. Sat. 1-4:30 p.m. Sun. 9-4 p.m.

**July 26**

**Flower Arranging Demonstration.** South Coast Botanic Garden, Palos Verdes Pennisula. 2 p.m.

**July 27–August 7**
**Annual Summer Seminar in European Styling** taught by Rene van Rems at the design school in Encinitas. 9–5 p.m. daily. Fee. Info: (619) 944–0252.
**July 31 through August 27**
**Artists of the Month featured at the Hospitality House at Descanso Gardens.** Info: (818) 790–5571.
**August 1, 2**
**San Diego County Dahlia Society's Society's Show.** Casa del Prado, Balboa Park. Sat: 2–5 p.m.; Sun: 10–4:30 p.m. Free.
**August 1, 2**
**South Bay Bromeliad Associates present Bromeliad Show and Sale** at South Coast Botanic Garden, Palos Verdes Peninsula, CA. Sat: 12–4:30 p.m.; Sun: 10 a.m.–4:30 p.m.
**August 9**
**Miniature Rose Lecture by Bob Butler.** Rose Arrangements brought by Mary Butler, South Coast Botanic Garden, Palos Verdes Peninsula, CA 2 p.m.
**August 9**
**Hibiscus Show by the American Hibiscus Society, Ross Gast Chapter** at the Wild Animal Park, Escondido, CA 11–5 p.m.
**August 15, 16**
**South Coast Dahlia Society's Dahlia Show with about 1,000 blooms** by growers from Santa Barbara to San Diego. South Coast Botanic Garden, Palos Verdes Peninsula, CA. Sat: 12–4:30 p.m.; Sun: 9–4 p.m.
**August 15, 16**
**San Diego Fern Society's 9th Show and Sale.** Casa del Prado, Balboa Park. Sat: 1–5 p.m.; Sun: 10–5 p.m. Free.
**August 17 through 21**
**The Association of Zoological Horticulture (AZH)** is holding its annual **Conference at the Calgary Zoo, Botanical Garden and Prehistoric Park.** For information and registration, contact: Don Peterkin, Horticulturist, Box 3036, Station "B", Calgary, Alberta, Canada T2M 4R8.
**August 22, 23**
**San Diego Gesneriad Society's 11th Show,** Casa del Prado, Balboa Park. Sat: noon–5 p.m.; Sun: 10–5 p.m. Free.
**August 22, 23**
**The Second Intercity Cactus and Succulent Show** sponsored by the Long Beach, Los Angeles and San Gabriel Cactus and Succulent Society at Los Angeles State and County Arboretum, Arcadia, CA. 9–4:30 p.m.
**August 23**
**Begonia Lecture "Begonias of the World" by Muriel Pers,** member of the American Begonia Society. South Coast Botanic Garden, Palos Verdes Peninsula, CA. 2 p.m.
**August 29, 30**
**San Diego Turtle and Tortoise Society's 13th Annual Show,** Casa del Prado, Balboa Park. 10–5 p.m. Free.
**August 30**
**Indoor Plant Lecture by Christine Robaltto.** South Coast Botanic Garden, Palos Verdes Peninsula, CA. 2 p.m.
**September 5, 6**
**San Diego Professional Horticulturists 4th Annual Show.** Casa del Prado, Balboa Park. Sat: 10–5 p.m.; Sun: 10–4:30 p.m. Free.
**September 19, 20**
**San Diego Bromeliad Society's 13th Annual Show.** Casa del Prado, Balboa Park. Sat: 1–4:30 p.m.; Sun: 11–4:30 p.m. Free.
**September 26, 27**
**San Diego Bonsai Club Fall Show,** Casa del Prado, Balboa Park. 10–5 p.m. Free.
**October 23, 24, 25**
**Annual Fall Show by Palomar Orchid Society at the Japanese Cultural Center,** 150 Cedar Road, Vista, CA. Public is invited. Anyone may enter his orchid plants. Info: (619) 941–0382.


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# Proteas

By Alison M. Voss

One of the Pin-Cushion Proteas
*(Leucospermum pattersonii)*

Illustration by Pat Ziebarth

To paraphrase the French author Colette, everyone has a special memory that is evoked by a flower.....the flowers of memory, binds the bouquet."

A beautiful bloom, that eventually brought a new floral industry to San Diego County, and became the darling of florists around the world, always tells me a story, within a story, within a story.

## THE FIRST STORY

The first time I ever saw a protea, was in December of 1974, when my fiance presented me with a stunning bouquet of Pink Mink flowers, or **Protea neriifolia.** While this is probably the best known of all the proteas grown, I'd never dreamed that such an exotic flower even existed.

Pink Mink is also called the oleander-leaved protea (**neriifolia** means leaves like an oleander, or **Nerium**), and it belongs to the "bearded proteas" group in the genus, so-called because of their distinctive, hairy bracts (the leaflike structures resembling petals.)

The tulip-shaped flower heads of the Pink Mink are about 5 inches long, and 3 inches wide, with the actual flowers being a fuzzy, pink mass, tipped with reddish-purple, and set deep in the surrounding bracts. This is what is called a composite flower, and it botanically resembles a daisy.

The petal-like bracts surrounding the interior flowers vary in color from a creamy-pink, to a deeper satiny pink, to carmine. Tipping the bracts is a luxurious purplish-black, soft, hairy "beard" that feels like fur. A truly amazing flower.

## THE SECOND STORY/ PROTEAS IN HISTORY

Much later, I discovered that the scientific two word name that is given to both plants and animals is a story in itself. This system of classification is called binomial nomenclature, which comes from the Greek words **bi** (two) **nomos** (part or portion), and **nomenclatura** (a system of names); and consists of first the genus, and then the species. A genus, which is always capitalized, is a group of closely related species; such as plums, cherries, peaches, and apricots all belong to the genus **Prunus.** The species is a single kind of living organism: such as **Protea neriifolia.** Usually the genus is in the form of a Latin (rarely Greek) noun, and the species is a descriptive adjective.

The plant genus, **Protea,** was named by the great Swedish botanist, Carolus Linnaeus in 1735. Linnaeus is credited for the development of binomial nomenclature, and he's sometimes called the "Father of Modern Botany". Scientists often use the names of mythological beings to name genera, and in Greek mythology, Proteus (a prophesying sea god,) was famous for his power to assume different shapes at will. From his name we get the adjective, protean, which means ever-changing, or versatile.

The genus **Protea,** includes some 114-150 species of evergreen trees and shrubs native to sub-Saharan South Africa, and is noted for its brightly colored, exotically shaped, thistle-like flowers. The genus, in turn, belongs to a plant family of the same name. It's common practice to name a family of plants by adding "aceae", meaning family of, to the stem of the first genus described within that family.

Members of the **Proteaceae** are mostly native to the drier regions of the Southern Hemisphere, especially in South Africa, Australia, and New Zealand. The related genera (plural of genus) are radically different in appearance, and range from herbs, to shrubs and trees with extravagant, almost surrealistic blooms, to the more familiar macadamia nut tree (**Macadamia integrifolia** and **M. tetraphylla**), and the silk oak (**Grevillea robusta**).

The first protea ever recorded in botanical literature was **Protea neriifolia.** It had been discovered in 1597 by a Dutch trade syndicate on their way to the East Indies when they stopped at the Cape of South Africa.

It was sent (along with other specimens) to Carolus Clusius (a Flemish botanist and the creator of the first botanic garden in Northern Europe at Leyden in 1594), who erroneously identified, and described it in his 1605 book, **Exoticorum Libre Decem,** as"...the head of a certain very graceful genus of **Carduus** (a thistle):. In fact, it wasn't until 1810 that **P. neriifolia** was recognized as a distinct species, and formally described and named.

The next 150 years were uneventful for protea history. Then in 1772 Karl Peter Thunberg (Linneaus' successor at Upsala, after whom Thunbergias are named), and a young Scottish gardener, Francis Masson explored the Cape region, and brought back many South African plants to Europe, where they proceeded to capture the interest of gardeners. Proteas suddenly became very popular in the glass houses (starting with Kew), and botanical gardens in England and on the continent. While the common sugar-bush, or **Protea repens,** was the first to flower away from its native land, a special favorite with collectors and gardeners of the time was **P. neriifolia.**

## THE THIRD STORY/ FIRST PROTEAS IN THE UNITED STATES

Quail Botanical Gardens was the first public garden in the United States to display a collection of members of the protea family. Early in 1966, the late Mildred Macpherson, a Quail Gardens Foundation member and part owner of the now defunct Williams & McPherson Nursery in Leucadia, and then garden supervisor, P. J. Miller (also deceased), walked Howard Asper Sr. through the Botanical Gardens and outlined where the garden staff and the Quail Gardens Foundation would be able to put proteas that Asper Sr. would donate from his Green Valley Nursery in Escondido.

Only a few years earlier, Howard Asper Sr. had been responsible for introducing proteas to cultivation in the United States.

Long before his involvement with proteas, Asper had been instrumental in the planting of Descanso Gardens in La Canada in 1942, in conjunction with the retired owner of the Los Angeles Daily News, Manchester Boddy. (Boddy later bought and developed the present site of the San Diego County Park, Wilderness Gardens.) The intent with Descanso Gardens was to create a huge camellia collection for public display.

While living in Upland, California, Asper Sr. worked for Armstrong Nursery from 1927 through 1941, where he had had experience in hybridizing, propagating and photographing camellias. Boddy got Asper's name in early 1941, and asked him to come over to Boddy's 20 acres, in what would later become the La Canada Flintridge area, and advise him on what camellias to plant under his huge, old oaks.

In March of 1942, Manchester Boddy, his friend Charlie Jones, (then President of the Richfield Oil Corporation), and Asper Sr. went over to see Mr. Matsu of the Star Nurseries in the Sierra Madre, and before they left that afternoon, Boddy had written Matsu a $50,000 check for camellias, an astronomical sum in those days. Asper Sr. remembers that as the three gentlemen left that day, Matsu stood there with disbelieving tears in his eyes.

The 400,000 plants were moved over to the Flint Ranch, named after Senator Flint the first owner, and later site of La Canada Flintridge in Los Angeles. Asper remembers, "that's where I really learned camellias, the hard way!"

In 1945, while acting as Superintendent of the germinal Descanso Gardens, Asper Sr., hired the famous plant geneticist, Dr. Walter Lammerts. Through Dr. Lammert's efforts Descanso was able to import **Camellia reticulata,** and also


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establish their rose evolution garden. Asper stayed there until shortly after Boddy sold Descanso Gardens to the county of Los Angeles in 1953.

In 1954 Asper Sr. was hired by what he calls the "great Huntington" (the Henry E. Huntington Library & Art Gallery in San Marino), as their Superintendent of Buildings and Grounds, a position that he held until his retirement in 1962. Asper's office was in the botanical library, where he did a lot of reading, and here he first became aware of proteas.

One day he called in his right hand man, Harvey Short, and some of his other gardeners (he supervised 15), and said to them, "Why don't we grow proteas?" The staff replied that it just couldn't be done; that the plant authorities of that time, including William Hertrich, the former Curator at the Huntington, Hugh Evans of the famous Evans & Reeves Nursery in Brentwood Heights, Los Angeles, all agreed that proteas wouldn't grow here. They had all tried and failed. Asper said, "Well, let's try it anyway", and sent off for seed to South Africa. In retrospect they made all the classic mistakes. They planted them in a greenhouse over heating cables, and after the seedlings got to be 1 to 2 inches tall they all damped off and died.

In 1958 or 1959 Dr. William Stewart, then Director of the Los Angeles State and County Arboretum, called Asper and said that Frank Cecil Batchelor, a farmer from South Africa, was going to give a program on proteas at the Arboretum, and would he like to come? Asper and his wife, Hazel, were in the front row. After the lecture the Aspers took Batchelor out to the nearest pub, where they talked until 2 a.m. the next morning.

Batchelor and his wife were early conservationists in South Africa, where they owned 500 acres that were planted in fruits and cut flowers. In those days the "coloreds" (people of mixed ethnic backgrounds) harvested proteas for cut flowers by going into the wild and pulling entire plants out of the ground. Batchelor envisoned large scale commercial possibilities. In 1944 he made his initial protea plantings in the Devon Valley outside of Stellenbosch, and soon he became the first person to produce cultivated proteas for the South African market.

Asper obtained seed from Batchelor, and also from Dr. Howard Gentry, a well known agave collector (the world's authority on the genus), who then lived up by Murrieta Hot Springs. Dr. Gentry had previously been sent by entrepreneurs to South Africa to study proteas as a crop for Southern California. In 1962 both Dr. Gentry and Asper tried planting proteas from seed. While Dr. Gentry's attempts were unsuccessful at Murrieta, Asper's luck was somewhat different. "Fortunately," Asper laughingly reminisced, "I had no greenhouse, or even a hotbed. I had a very good plantsman, Gordon Cochoran (a primula grower, who had property adjacent to Asper's Green Valley Nurseries) working for me, and we planted the seed in October — just by chance! Now, I wouldn't think of planting them any other time."

In the spring of 1963 Asper was able to pot up some of the first seedlings from his place in Escondido, and he gave a number to Dr. Gentry.

At the same time, Asper was becoming discouraged with his experimental venture, and said to his wife, "I'm going to throw these darn plants away. Everybody says that they won't grow here anyway." Hazel, who has always been one of his staunchest supporters, replied that he'd gone this far with them, why didn't he just go ahead and see what happened? Howard Jr. remembers talking to his dad over the phone during this same indecisive period.

According to Jr., the first time he saw proteas was as non-blooming seedlings in pots, and he was only mildly curious. Later on, in 1963, while he was living in Los Angeles he had a **Leucodendron strictum** in a small tub on his porch, and even though it eventually flowered, he thought it was interesting, but not especially attractive. Despite Jr.'s initial indifference to proteas, he had a natural inclination for plants. As a teenager he had worked summers at Descanso Gardens. Later he attended California Polytechnic at San Luis Obispo, where he studied under their Landscape Design/Contractor program.

So, Sr. called Jr. on a hot spring day in 1963 and said, "What do you think I should do with these? They're all full of weeds, and I don't think there's any future in these at all." They decided to plant the seedlings out below the house in Escondido, and to try to duplicate their growing conditions in South Africa by watering them overhead as if they were getting seasonal rainwater.

NEXT ISSUE:
The Breakthrough & Protea selection & cultivation.

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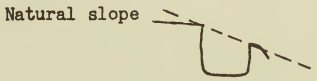
# Planting and Care for all members of the Protea Family

Pink Mink

By J. Howard Asper

The most desirable spot in the garden is in full sun, in a well drained area, with some wind or air movement, and where the Proteas will get watered no more than once per week.

Dig a hole about double the size of the Protea container.




Then mix the soil removed from the hole - 3 parts your soil, to 1 part fir bark, redwood shavings, or oak leaf mold. Use this to backfill.

Build a basin of approximately 2" around the plant and "mulch" 1½" with fir bark, redwood or leaf mold. Water in well by filling the basin at least twice to allow the water to compact the soil.

Feed with a well balanced (6-6-4) liquid fertilizer once per month, beginning March 1st through October 1st.

Do not stake your Protea! Allow it to spread and brace itself, then it will grow upright.

Proteas don't mind pruning. Go ahead and cut the flowers and enjoy them.

**PLEASE REMEMBER**

1. **Water no more than once per week.**
2. **Mulch as recommended.**
3. **Feed as recommended.**

NOTE: Proteas are "acid lovers" like camellias and azaleas. A (PH) of 6.5 is most desirable.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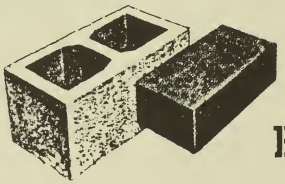


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By Kathy Gilbred

Fuchsia mite (properly called fuchsia gall mite) has become a very serious problem for fuchsia growers in the United States over the last several years. The microscopic pest has destroyed many fuchsia gardens, especially in the San Francisco area, and now the little critters have found their way to San Diego.

Because the fuchsia mite is very contagious, it's important that we keep it under control and prevent it from becoming a common problem in San Diego. Properly treated, mite can be controlled...but if it is allowed to spread, it can mean the destruction of many of our gardens and collections.

Fuchsia mite infestations are distinctive... they look like something out of a science fiction movie. Leaves, stems and blossoms become distorted and fleshy, and take on a pinkish or red mottled color. In the beginning, the disfigurement of leaves may look like the curl caused by aphids, but gnarled and distorted growth means fuchsia mite. You can see examples of mite on the fuchsias along the Prado in Balboa Park.

Fuchsia mite is incredibly "contagious." It is spread by the wind, by insects and birds, and by our hands, clothing and garden tools. If an infected plant remains among other fuchsias, mite will spread rapidly. This means that infected plants must be dealt with right away, but it also means that a little prevention can be very important.

By way of prevention, be sure that you examine new plants and starts carefully, particularly if they come from nurseries that aren't experienced in fuchsia care. Even healthy-looking plants should be isolated from your collection for a while, to make sure no mite is present. In parts of the county where mite has begun to spread, you might want to consider preventive spraying with one of the treatments mentioned below.

Once you find an infested plant, isolate it from your other fuchsias. You should prune off any affected leaves and stems, and destroy the rubbish. Be prepared to prune again. Some gardeners have eliminated mite by pruning alone, over a fairly long period of time, but most rely on chemical treatment. Sevin is one of the most commonly used pesticides, and has been used with some effectiveness. If you use Sevin, consider following it with sprayings of Kelthane; Sevin destroys the critters which keep spider mite in check, and repeated Sevin spraying may encourage spider mite infestation. Thiodan is recommended by a Bay Area nursery, and our own Barney Gonzalves suggests Maverick in combination with Pentac (a miticide). Both Isotox and Orthenex now carry labels saying they can be used for fuchsia mite, but there is little information available about their effectiveness. Spraying once is not effective; all of the pesticides must be used repeatedly to get rid of fuchsia mite.

If we are really to keep fuchsia mite from becoming a problem in San Diego, it's not enough to take care of our own gardens. We should be sure to mention the problem to friends who raise fuchsias. When we see an infected plant in someone else's garden, they deserve a warning. After all, the pest is new enough here that even an experienced gardener may not recognize it or know how to treat it. And, of course, nurseries and public gardens should be warned if they have an unnoticed infected plant. If we take these precautions, we can make sure that the devastation of San Francisco gardens isn't repeated here.

# COMPUTER IN MY GARDEN (CLUB)

by
Patrick Shields
Escondido Garden Club

I don't have to prune, fertilize, or water my Apple IIe computer, but it is growing more and more important in my garden club activities, and I am harvesting its fruit, which is improving the garden club's objectives, projects and programs.

A computer is worthless unless a human 'boots' it. This human must be aware of the numerous software programs available today that can help the club's leaders do a better job more efficiently in less time. If some of your members have a personal computer stored in the closet, or gathering dust on a desk, 'boot' them up to use it with some of the programs suggested below.

"Appleworks" is an integrated data base, spreadsheet, and word processor that all club members will find useful. The membership chairman will find keeping membership records a snap on the data base file. Members may not take kindly to their names in the computer at first, but don't confine the membership file to names and addresses. Include birthdates, and send them a card; special garden interests, so you can get their help or advice both for club projects or for other members, and list their hobbies. That might make a good program at a general meeting.

The treasurer would certainly appreciate the spreadsheet to recalculate budgets, cost estimates, and financial statements. It can print intermediate or final copies for comparisons whenever needed. For example, if the dues were raised or lowered how would it effect the total budget?

Word processors let the secretary revise minutes, letters, and reports without retyping. Committee chairmen will plan agendas, workshops, and programs for all committee members. They painlessly edit it, rearrange it, and even polish it up with headers, footers, and page numbers, and then print them in several minutes for those present to take home. I recently printed our flower show schedule plus a special edition printed on one side only for the judges, so they could handle it easier on their clipboards.

The club newsletter now has cartoons, larger print, and several fonts thanks to Springboard's "The Newsroom" program. It's printed in various colors on paper of many hues. Committee chairmen have over 600 pictures they can use to spice up their announcements. They can even edit these pictures to change hair style or color to suit themselves. Our horticulture chairman has 35 bugs, 25 rodents, 22 trees, and a dozen flowers she can print with her garden tips.

Keep the awards chairman busy all year, not just at flower show time. "The Certificate Maker" enables you to create attractive personalized awards that are a meaningful way to recognize and encourage all kinds of club member's achievements. You can provide specific, immediate, and tangible praise for any occasion. It provides more than 200 professionally designed templates and even includes several dozen seals and stickers to attach.

The garden club recently awarded "Best Vacation Pictures", "Gourmet Chef", and "Historian Emeritus" awards to deserving members. Not all awards have to be sober or dignified. Some of our awards are in a humorous mood, such as Rose Bradley's "Thanks for Nothing" award when she brought a lovely container with nothing in it, and called it a 'moon plant' at a recent plant exchange workshop.

New members would certainly appreciate a list of plants that grow well in your area. This is only one of the features offered by Ortho's "Computerized Gardening" program. If the club is planning a flower show in the fall or late summer, what flowers will be in bloom? What colors do you want in your garden in May? In October? How high will they grow? All of these questions are answered in this software package, plus the light, water, and cultivation requirements for each kind. It also includes a calendar/note pad record of your garden activities.

There are hundreds of other programs published that will be of use to garden clubs. My next one might be "Botanical Gardens", but give me time, my Apple is only six months old.

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By Bettie L. Furuta

Yes, we've been going bananas for some time, but now the bananas are trying to get even. They are descending upon us in many forms besides the delectable edible ones with which we're so familiar.

Gimmick manufacturers, seed companies and plant suppliers are out in numbers hawking everything from kooky gifts shaped like bananas to 4' container grown plants ready to bloom in your living room. Banana bread and banana cake are gaining in popularity and crowding out the latest favorites of pumpkin bread and zucchini cake. So bone up on bananas as you'll soon be surrounded by this burgeoning bonanza.

Since the days of antiquity, the banana has played an important role in the food supply and culture of the world. When early migrants of tropical areas moved on to more fertile lands, the banana was always one of the treasured plants to be protected and assured safe arrival. Even the leaves were highly valued for wrapping other plants and cuttings as they kept the material alive for many weeks, much the way we use plastic today. The banana leaf is said to contain certain properties that act as preservatives.

Throughout history few plants have been of more importance, not only because bananas are available to eat throughout the year, but because of their many uses. In many aboriginal countries, the leaves were used as house roofs, umbrellas, plates, cattle feed, and clothing. Leaf sheaths have been used for water runways to keep soil from washing out, and the fiber for tying, plaiting and thread. India has great use of banana ashes for dyeing, tanning, in curry, and as a salt substitute.

The banana's origin, probably southeast Asia, is closely interwoven with mythology. The story that the serpent, which tempted Eve in the Garden of Eden (Paradise), hid in a bunch of bananas, influenced the early plantsmen to christen the fruit **Musa paradisiaca** (fruit of Paradise) and **Musa sapientum** (fruit of knowledge). An Indian legend tells us that the banana was the favored food of the sages who sat under it's giant leaves and ate the fruit. Thus the name **Musa sapientum** evolved – fruit of knowledge.

At one time this fruit was called the "Apple of Paradise" or "Adam's Fig" before the word "banana" was taken from a tribe of natives in the African Congo. It was believed by the Koreans and others that it was a banana that tempted Adam.

In more recent times, the Portuguese brought this faithful fruit to the New World, about 500 years ago, when other names for the banana were appearing. It's Portuguese name was "platino" while it's Spanish name was "bananera".

There are probably more legends about bananas than any other fruit. An Hawaiian favorite is that formerly all bananas held their fruit up in the air. However, a battle ensued in which the lowland bananas were defeated by the mountain bananas, and the lowland losers have since held their heads in shame – the bananas hang down.

The Hawaiians valued the fruit not only as a food source, but also as a necessary part of their religion and culture. The kahuna, or high priest, restricted women from eating most banana varieties under penalty of death, as the banana was the symbol of man. Man was compared to the banana; after he matures and bears fruit, he dies. Upon the death of someone of royal blood, a human sacrifice was offered to the Gods, but it was permissible to substitute a whole banana stalk instead.

Another story about the origin of the banana's name – **Musa** – is from an exciting chapter in history. Supposedly it was named after Antonio Musa, physician to Octavius Augustus, first Emperor of Rome. The heyday of the Roman Empire always brings visions of pomp and grandeur far beyond what most of us know today, and the banana must have made quite a hit with those lascivious Latins.

Many of the native people of the tropics prefer to cook bananas rather than eat them raw, as most of us do. This is of little wonder, as many varieties are very starchy and we would consider them quite inedible unless cooked. Some are called plantains, and are popular deep fried as chips; often packages of these are available in markets. In many cultures the edible raw fruit is referred to as bananas, and the ones that must be cooked are referred to as plantains.

Leaf buds can be used as vegetables, and one form of banana has edible underground stems. Flowers can be eaten after being cooked; they can also be used medicinally along with the roots and fruit. Vinegar, alcohol, and wine are products of the fruit; what more could anyone ask of a plant? Certainly anything that can be made into wine can't be all bad!

Bananas were sold nearly two centuries ago in New Orleans by traders from tropical America. But their popularity did not get a foothold in this country until the Philadelphia Exposition in 1876, when the banana made it's formal debut. As things turned out, it was one of the two main curiosities at the fair, the other was the telephone.

When it comes to healthful, tasty eating, and something that comes all wrapped up in it's own sterile container, the banana is really a super food, and one of the first solid foods given to babies. It's biggest attribute is potassium, a mineral greatly needed by our bodies for heart, nerve, and muscle functions. Vitamins B and C are present in some amounts along with calcium and phosphorus, while vitamin A and fiber are also well represented. Even though almost no fat is contained in this special food, it is a delight to eat because it satisfies the sweet tooth, yet boasts only about ninety calories.

Bananas emit their own ripening gas, so you can really control the ripening of your banana supply. If you enclose bananas in a brown paper bag, they will ripen faster than when not wrapped, as the bag will trap the gas and speed the ripening process. Conversely, if your bananas are ripe, and you want to prevent their getting overripe, you may put them in the refrigerator, despite what Chiquita Banana says. They can be kept for a couple of days, and even though the skin will turn brown, the fruit inside will remain fresh and firm.

They have long been known as aphrodisiacs, and in the history of mankind there are countless mentions of the banana as an aphrodisiac, as well as a symbol of fertility and manhood.

Not only are bananas being touted as practical plants for outdoors in warm areas, but also as elegant specimen plants for the solarium or indoor garden. A popular gardening magazine showed the dwarf Chinese banana as a desirable indoor plant and the dwarf pink banana as being very decorative with it's rosy flowers and fruit. All the bananas have such strikingly large tropical leaves that they make a dramatic contrast with other plants. They will blend in beautifully at the rear of a grouping of plants with variegated foliage or contrasting leaf shapes.

Gracing an entrance hall these beauties of the jungle will impart a warm welcome to your guests. Most are large enough to command attention by themselves, perhaps silhouetted against a plain background such as draperies or a wall. Create a lush tropical scene with a combination of plants; this is sure to stir in us a desire to get away from it all to some magical isle.

Many ornamental bananas are huge and not adaptable for any but the largest of interiors, however some smaller ones can be grown by most anyone. **Musa nana**, the Chinese banana, even outdoors grows only to about 7' so can easily be grown indoors in a large tub. The fruit is bright yellow, only 5" long but oh, so sweet, the favorite of most people in tropical lands. Some of the ornamentals are grown for their showy flowers, gaudy fruit and elaborate leaves. **Musa coccinea**, the red flowering banana, has outrageous scarlet bracts. **Mus velutina**, the pink velvet banana, has sinfully smooth pink bracts. **Musa ornata**, the pink ornamental banana, has bluish rose bracts that always demand attention. Not to be outdone is **Musa zebrina** with leaves striped like a zebra, as it's name indicates. After most bananas have born flowers and/or fruit the trunk is cut down and new plants will sprout from the base. These suckers or offsoots will become the new plants and will usually mature in 12 to 18 months.

Now let us talk about some of the relatives of bananas such as: The bird-of-paradise which was adopted by Los Angeles as the city flower. it grows so well there, and signifies the exotic something that spells "Los Angeles", the City of Angels. The birdlike flowers give rise to it's common name. The plant, being native to South Africa, was botanically named after the wife of King George III, Charlotte Sophie, of the family Mecklinburgh-Strelitz and a patron of botany, hence Strelitzia. **Strelitzia reginae** is the species usually seen with it's orange birds with the blue tongues. It will probably always remain popular as a cut flower because of its longevity after being cut. When growing this little lovely in a container, care must be taken to set the plant exactly at the crown where there is a definite division with the leaves going up and the roots going down. If this is not done, chances of the plant blooming are pretty slim indeed. The genus **Strelitzia** encompasses several larger species which we will not deal with here as most are too big for all but the largest greenhouses or they must be grown outdoors.

The travellers palm is not a palm but, because of it's height of 30' or more and it's broad banana-like leaves, it does have a palm-like appearance. Botanically it is **Ravenala madagascariensis**, Ravenala being the native name of the plant in it's home in Madagascar. This giant relative of **Musaceae** (the banana family) is said to derive it's common name from the fact that a quart or more of water is held in the closed cavity at the base of each leaf stem, which would always be a source of water for the weary traveller. This seems irrational in view of the fact that the plant usually grows only in moist areas where there would surely be better water sources available than the bug-ridden stale water at the base of the leaves. Perhaps the real purpose of this water reservoir is to function as extra support for the leaves in strong winds. Inasmuch as the mealy seeds minus their gorgeous turquoise velvet coats

are edible, the so-called weary traveller could also have lunch along with his drink. Maybe the water ferments, and it would be quite pleasant afterall — the wine of the wilderness perhaps? You could grow this along for a few years and have your share of fun with it as a conversation piece, but because of it's eventual size you would have to pass it along some day. Maybe a friend with a large atrium, or an organization such as a botanical garden would be happy to be the recipient of your aging specimen.

As for **heliconias**, they are comprised of over 100 species several of which are small enough to lend themselves to indoor culture. The name comes from Mt. Helicon in Greece, which is the seat of the Muses. This may have been yet another version of the origin of the family name, **Musaceae.** Recently, however, the family name changed to **Heliconiacae.** They are mainly native to South America which gives you a clue about their culture. To mention a few whose size is compatible with our homes, **Heliconia illustris** would be my favorite with it's sexy red and green striped leaves. **H. humilis**, commonly known as "lobster claw" has bright red spathes shaped like lobster claws in shingle fashion. The parrot heliconia, thus it's name **H. psittacorum**, has showy orange spathes shaped like parrots, and bright yellow flowers with green tips. **H. aurantiaca**, meaning golden, is also another special one with it's orange spathes and lemon-yellow flowers. A lesser known one that deserves more recognition is **H. flava**, meaning yellow, and it truly has the brightest yellow spathes and white flowers. As with many tropical flowers the heliconias are blessed with brilliant, showy inflorescences but it is the spathes which are the scene stealers, not the flowers.

**CULTURAL CLUES:**

These recommendations will be for growing plants indoors. For any of you who live in warm areas where you can grow these proud peacocks outdoors, you will easily be able to adapt these suggestions. These yellow yummies and their ravishing relatives like a rich soil, plenty of water, and fertilizer. Most of them will need to be grown in large tubs with castors, so that they can be moved readily from time to time, or you'll wind up with some double-hernia plants. (One time a friend and I were buying orchids from a little local lady in Hawaii. I said to my friend as we were loading one of the plants in a heavy concrete pot into the van, "this sure is a double hernia". The little lady replied, "Oh, I never pay any attention to the names".)

Just as you should grow any plant in a large tub, make sure that the drainage will be excellent, and spread an inch or two of gravel in the bottom of the pot. The soil mix should be very friable, the typical 1/3 each sand, peat, and garden loam would be adequate, or you can always buy a well-balanced mix. After transplanting your plant into the tub, water it generously until the water drains out the bottom, then do not water it again until the soil starts to feel dry to the touch. When your plant takes hold and seems established, probably two or so weeks, fertilize with an all-purpose fertilizer, either liquid or granular whichever you prefer. After that, fertilize about once a month except for the short dark days from mid-December to mid-February, when it is best to withhold fertilizer and not force growth.

Remembering that bananas and their kin are indigenous to the tropics, you should try to simulate tropical conditions. Full sun will be difficult to manage unless you have a solarium or tropic house, but do give as much sun and artificial light as possible. Humidity is always a problem in a heated home, so use all the tricks you've learned in growing your other houseplants to maintain a high level of moisture in the air. This is much better for you as well as the plants, and you'll even save money because if the humidity is high, your body is comfortable at lower temperatures. You should be able to turn down the thermostat a notch.

If you like to move your houseplants around and outdoors when the weather warms, be sure you make any moves with your banana family gradually, and above all, don't subject them to any wind or the leaves will tear and become less attractive. These brazen beauties need to be babied along to be sure but they will reward you with their shocking flowers or fruit when the time is right.

Temperature is also important, these jungle jewels will feel comfortable in the same temperature you do, and will also tolerate cooler rooms at night. But if you keep them on a sunporch, or other room which is considerably cooler than the rest of your house, they will be unhappy. The fact that a couple of the sturdier species can even withstand a couple of degrees of frost doesn't mean that they like cold conditions. They won't die, but afterall, you want them happy and thriving, not just standing there with chattering leaves.

The grand finale of this banana bonanza is a true saga of a banana which is very rare but worth mentioning as a candidate for the world's most unusual plant. It is an Hawaiian banana called "Mia's hapai" literally meaning "pregnant banana". Unlike most bananas that bear fruit at the top of the plant, this one's trunk swells like a pregnant woman and splits open, revealing small edible bananas inside the trunk. I had one several years back but it never swelled or reached maturity. I was later to learn from an old Hawaiian that it had been planted wrong. According to him, the man of the household is supposed to plant the banana during the light of a full moon,stark naked of course!!!!!!!!

*Excerpted in part from Bettie Furuta's book COOKERY FOR LOVERS, Aphrodisiacs in the Kitchen. Order from Furuta/Associates. Box 399CG, Fallbrook, CA 92028. $14.95 + $2.90 tax, postage and handling.*

# Botanical Tours

By Dale Ward

While strolling in the park one day, Balboa Park that is, I couldn't help but marvel at the vast array of unusual botanical beauties. Being the plant enthusiast that I am, I couldn't help but wonder more about the impressive plantings. What is the name of that tree? Where does it come from? How old is it? Who planted it? Where could I find out such information? Then quite suddenly an idea struck, like lightning, — why don't I start a plant I.D. class in Balboa Park so others can satisfy their curiosities about the park's botanical bounty.

None of the Museums were doing such a thing. The Park Department wasn't either, nor was the City. No one was sponsoring such an interesting endeavor so I decided I would.

After getting the proper permits, licenses and knowledge, I was ready to begin Offshoot Botanical Tours. I am continually adding to my repertoire of knowledge, not only about the gardens but the history and architecture too. I can tell you stories of the first trees planted in the 1800's to the latest donations to the Desert Garden.

Marketing Offshoot Botanical Tours was another story. I promptly joined many of the garden societies, took out ads in several magazines, newspapers and newsletters, joined the Convention and Visitors Bureau (at $250 a year) and started a 1,000 piece mass mailing campaign. A bit ambitious for just one person I must admit, but I had the help of 2 plant experts in providing a few of the early guided tours.

As my adventuresome spirit grew, I expanded my plans. I added monthly nature walks of Presidio Park on to my weekly walks in Balboa Park. Once I got a handle on those plants, George Marston and Roland Hoyt history, as well as being indoctrinated into the early Kumeyaay Indians and native plants of the area, I was ready for an even bigger challenge.

No, the new project wasn't my own landscape company, my lecture circuit, my newspaper column, Balboa Botany, in the Sunday San Diego Union, my supplement to the Old Town school program's curriculum, nor my involvement in the Old Town Restoration Committee, but it was to expand my tours one step farther. I wanted to conquer the largest, most comprehensive botanical garden in the city, the 100 acre garden of the San Diego Zoo.

Just as I thought I knew something about plants in San Diego, I stepped into the Zoo and was humbled by all that I didn't know. The botanical collection there boasts a mere 6,000 species. Gulp. That is a Mt. Everest to conquer so I began climbing. I've received tons of help from the horticulture department to get a handle on the little known botanical side of the animal oriented zoo.

I went so far as to offer the new marketing idea and my expertise to the zoo. Of course the horticultural department was highly appreciative and encouraging. The group sales department was totally in favor of promoting a new marketing angle for boosting attendance. The specialty tour department loved the idea and had no one on staff as knowledgeable as me on the subject. Even the education department liked the idea but due to interdepartmental discrepancies, the ominous labor union and forever threatening budget cuts, I got nowhere within the zoo system. I forged onward. Now I conduct regular botanical tours at the zoo.

Now that I've shared some of the trials and tribulations, pitfalls and successes of Offshoot Botanical Tours, I'll bring you up-to-date.

Offshootours is the current name. Offshootours offers weekly guided tours of Balboa Park every Saturday at 10:30 and 12:30. Reservations are not necessary, just meet at the famous Botanical Building. The morning tour, "Heart of the Park", is an easy-paced one-hour informative tour introducing the park core. Acquaint yourself with it's architectural and botanical richness, while hearing the inside story of the park's history and development. This includes a look into the Botanical Building.

The afternoon one-hour tour, "Garden Safari", each week explores in detail one of the park's vast botanical attractions. Highlights include the Palm Arboretum, the Desert Garden, and the exotic tree collection for example.

The low cost of $2 per person fits into most everyone's budget. Offshootours also offers a membership pass for just $6, which gives you unlimited touring for a whole year.

Two-hour botanical tours of the zoo are conducted on the last Sunday of each month starting at 9:30 a.m. Reservations are required.

I encourage all individuals and groups alike to attend a tour soon. Don't wait. Why hesitate? Now is the time to enjoy the park at it's botanical best. For more information call Dale Ward at 297-0289.


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# SUCCULENTS of the CANARY ISLANDS

**(Aeoniums, Aichrysons, Greenovias, Monanthes)**

By Dorothy Dunn

PHOTO BY WILBUR H. GLOVER

AEONIUM ARBOREUM VOR A TROPURPURIUM
"ZWARTROP" – CRESTED EXAMPLE – not normal

The Canary Islands consist of a group of seven main islands located off the northwest coast of Africa, in the vicinity of southern Morocco. All are of volcanic origin and on one (Lanzarote) there is still some live volcanic action in the Montanas del Fuego, (Mountains of Fire). The islands are Gran Canaria, Teneriffe, La Palma, Gomero, Hierro, Lanzarote, and Fuerteventura.

The Canaries are actually the tops of volcanic mountains protruding from the sea, with altitudes ranging from 4,000 to over 12,000 feet. They are subtropical in appearance and have a vernal climate all year around, with virtually no difference between the seasons. These conditions are conducive to a great wealth and variety of plant life, much of which is native to these islands and not occurring naturally anywhere else in the world. While the succulent flora comprises only a small percentage of this amazing abundance, the number of genera represented is surprisingly diverse. These include: **Aeonium, Aichryson, Greenovia, Monanthes, Sedum, Ceropegia, Caralluma, Euphorbia, Senecio,** and **Aloe.** However, since the first four above-mentioned genera contain most of the succulent species found in the Canaries (only eight species are not native), this article will be limited to them.

**Aeoniums, Aichrysons, Greenovias,** and **Monanthes** all belong to the **Sempervivoideae** section of the huge **Crassulaceae** family, and are often referred to as the "Canary Island Sempervivums". They are more tender than the hardy European Sempervivums, but the species usually found in cultivation in this country are among the easiest plants to grow, requiring only ordinary garden soil, good drainage, and some shade and protection from frost for most of them. They do exceptionally well in mild climates located close to the coast.

**Aeoniums** are closely related to **Sempervivums** and at one time were generally included in that genus. There are about 40 species and numerous hybrids. They are mostly succulent shrubs or subshrubs with woody, branching stems which often produce aerial roots. They range in size from the tiny, bushy **A. sedifolium** to the very large **A. percarneum, A. canariense, A. urbicum,** and **A. nobile.** They grow rapidly during the winter and are dormant in the summer, when they should be kept fairly dry. Most prefer some shade, although some, notably **A. percarneum, A. sedifolium,** and **A. Castello-Paive,** will take full sun. A few, such as **A. arboreum** var. **Atropurpureum** and **A. sedifolium,** require full sun to enhance their distinctive colorations. Their habitats in the Canaries range from hot cliffs at sea level and clinker-type lava flows where it almost never rains (**A. nobile, A. Tabuliforme, A. Lindleyi**) to moist, gloomy, densely-wooded mountainous areas (**A. Goochiae**).

They are, with very few exceptions, easy to grow although all are frost-tender. They are susceptible to nematodes on their roots and mealybugs between their leaves. Propagation is simple from cuttings with most species, exceptions being **A. nobile,** which is slow-growing even under ideal cultivation conditions, rarely branches, and dies upon flowering, whereupon it produces millions of seeds, and **A. tabuliforme**, which seldom branches (unless beheaded) and whose flowering signals its approaching demise. However, **A. tabuliforme,** given some specialized care, can be reproduced from leaves, a feature unique in the genus.

**Aeonium** flowers are mostly yellow or straw-colored, although **A. percarneum, A. decorum,** and **A. Goochiae** have pink flowers. However, **A. nobile** has a distinctive, much-branched inflorescence of dark red flowers, which is also a peculiarity in this genus. A few **Aeoniums** have decidedly sticky leaves, and one of these species, **A. Lindleyi,** is widely-accepted as a reliable antidote for the irritation caused by **Euphorbia** sap.

**Aichrysons** are now routinely included in the genus **Aeonium,** although they do have some characteristics which set them apart. There are 12 species, all small plants, and all with yellow flowers. The generic name derives from two Greek words meaning "always gold". They have a habit

of disappearing in cultivation as they usually die after flowering, and are usually considered to be biennials. They all prefer shade, and are a little more difficult to grow than **Aeoniums.** Like **Aeoniums,** they are winter-growing, summer-dormant, and frost-tender. Propagation is generally by cuttings.

**Greenovias** are named for G.B. Greenough, a geologist. There are only four species, all native to the mountainous regions of the Canary Islands where they grow in pine forests, and all have yellow flowers. They have a very definite summer resting period, when they close up into tight little "rosebuds" covered by a brown, papery skin, and appear all but dead. This peculiar characteristic gave rise to the common names 'Irish Rose' or 'Green Rosebuds'. During this time they should be watered very sparingly, if at all. They start growing in the fall and flower in the early spring, and during this period they require more water and warmth. They like a porous, loamy soil and light shade. They are susceptible to mealy-bugs between the leaves (and snails all over the leaves!). They are profusely-clustering plants (except for **G. diplocycla** which never offsets) and therefore are usually propagated by cuttings.

There are about eighteen species and nine hybrids of **Monanthes.** Their name comes from the Greek, and means "one-flowered" or "single-flowered", although this has proved to be botanically incorrect. They are small, **Sedum**-like, clump-forming plants, with tiny fleshy leaves crowded into rosettes at the ends of extremely tenuous branches. In the Canaries they are found in a variety of habitats, including hot lower elevations near sea level, sheer cliffs at 8,000 foot altitudes, and on banks among thick grass, ferns, and mosses. In cultivation they seem to prefer shade. They are all tiny, delicate, mat-forming plants with somewhat inconsequential flowers of dull yellow. However, each flower contains a ring of conspicuous spoon-shaped nectar glands. **Monanthes** is probably the most poorly-represented genus in cultivation of this particular group of plants.

Other interesting succulents indigenous to the Canary Islands include: **Dracaena Draco** ("Dragon Tree"; the largest and oldest specimen grows on Tenariffe and is reputed to be at least 1,400 years old); **Senecio Kleinia,** which is common-place there, and several **Euphorbias,** the most prolific being **E. canariensis.** Other Euphorbias include: **E. obtusifolia** var. **regis-jubae, E. atropur-purea,** and **E. aphylla.** There are also a few **Cerop-egias,** including the "stick types" **C. fusca** and **C. dichotoma,** and Teneriffe is believed to be a natural habitat of **Aloe barbadensis (A. vera).**

There are no true cacti in the Canaries other than a few Opuntias which include **O. dillenii** and **O. Ficus-indica.**

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# The Surprising Spread of Peppers

By George G. Shor, Jr.

The history of the spread and use of the plants of the genus **Capsicum** is a curious one. These plants, native to the Americas, are now grown throughout the world, and appear in recipes that come back to America in ethnic restaurants. The genus is represented in American cuisine by all of the varieties of green peppers, chili peppers, Oriental hot peppers, pimentos, and paprika. The amazing part of this is the speed with which the plants spread and were adopted into local cultures along the routes of the Spanish and Portuguese explorers of the 15th and 16th centuries.

The "pepper" that was so highly prized in medieval Europe was not from the same plant as the "green peppers" or "chili peppers," which are all of the genus **Capsicum,** and mostly of the species **Capsicum annuum.** (In older garden books, many of these same varieties were assigned to **Capsicum frutescens.**) Both white pepper and black pepper (which the Spanish call pimienta) are the fruit of the tree **Piper nigrum,** which along with cloves and cinnamon is a native of the area formerly called "the Spice Islands," or "the Indies," now known as southeast Asia, including India and Indonesia.

Peppercorns, the whole dried fruits of **Piper nigrum,** were brought to Europe centuries ago; Egyptians, Greeks, Romans, and Arabs were acquainted with pepper and other spices, which came to them across the Asian trade routes in small quantities at very high prices — so high that peppercorns were counted out one by one. Marco Polo's trip to China and back by way of the Indies in the 13th century solved the mystery of the source of pepper. This did not increase the supply, but provided an incentive to find a way to the source.

Vasco de Gama and other Portuguese explorers set out to find the Spice Islands by going south and east by sea around Africa. Columbus and others tried to do the same by going west. In the last decade of the 1400s, and the first decade of the 1500s, both searches were successful in their own ways.

Columbus never found the Spice Islands that he was seeking, but found other "spice islands." While searching among the islands of the Caribbean (on his first voyage in 1492, or on a later one), he found two plants that vaguely resembled the pepper he sought: in Jamaica a tree that bore berries that looked like black peppercorns but had a very different aromatic flavor, and in Hispaniola (the island that is now the Dominican Republic and Haiti) a smaller bush that bore a fleshy fruit with a "hot" taste. He brought both back to Spain; both were called "pimento" or pimiento." The berry on the tree was allspice; the hot fruit was a **Capsicum** (what we now call a chili pepper,) called "aji" or "axi" by the local Arawaks.

The hotly flavored fruit that he found, a **Capsicum,** was not a native originally of Hispaniola. It had a long history of travel before that. Later Spanish explorers found variable but clearly related varieties (called "chillies" in the Nahuatl language of Mexico, and "uchu" in the Quechua language of Peru) in Mexico, Peru, and Chile, and archeological digs have since found pepper seeds as old as 7,000 B.C. The original **Capsicum** peppers were apparently native to Bolivia; the original source is thought to be near the city of Sucre, in the high Andes. By the time the Spanish and Portuguese "discovered" them, there were five different species and innumerable varieties under cultivation in most of the part of the western hemisphere that lies between Buenos Aires and south Texas. They

PEPPER BLOCKY BELL — Park Seed Co.

were also, as far as I can determine, all **hot.** The Spanish tried them, enjoyed them, and took seeds home to Spain. The plants are perennial — some varieties can grow into a small tree –but they have the common feature of bearing usable fruit within the first year of growth. The "sweet" pepper is a developed variety.

The Portuguese navigators had a different kind of success. They headed south and then east, to find the Spice Islands. Early on, they also discovered America. En route to the Orient they landed in Brazil, where there were more of the "aji" (in Portuguese "achi") Resupply ports were founded in Pernambuco and Bahia, Brazil, by the Portuguese in 1507. From there on, Portuguese ships reprovisioned in Brazil on their way south and east. They went on to what is now Capetown, to the east coast of Africa and the south coast of Persia, to Diu, Goa and the Malabar Coast (near Cochin) in India, and eventually all of the way through what is now Indonesia, finally reaching the trading center at the heart of the true "spice Islands," Ambon (Amboina) in the South Moluccas in 1511.

They apparently distributed pepper seeds all along the way, although we do not have the lists of provisions that the Portuguese carried east from Portugal or Brazil. By the middle of the 1500s peppers were grown wherever the Portuguese had stopped in Africa, and it was noted that one of the peppers grown in India was called "achee," or "Pernambuco pepper." They must have introduced them even into the heart of "pepper country" in Ambon. After the Dutch captured Ambon from the Portuguese, they sent (in the mid-1600s,) a dedicated botanist, Georg Rumpf, to be governor of that remote island. he obviously had a great deal of time on his hands, and prepared a gigantic manuscript, "Herbarium amboinense," which among the exotic tropical plants and the spices of the East Indies, included the first good botanical drawings of a **Capsicum.** He considered it to be a native of the East Indies, for it was widely used — but he noted that the native names were "chillie," "chilly," and "achar."

In the meantime, the small hot **Capsicum** peppers imported to Europe by the Spanish and Portuguese had become, like tomatoes, well known to botanists, physicians, and herbalists. They were used in the ornamental gardens of the rich, but not commonly used for food in Europe, even though the Spanish and Portuguese settlers in America had added them promptly to their diet. However, the **Capsicum** peppers appeared in Europe again by a different route. The Turkish empire carried out its own imperialist expansion, and besieged the Portuguese in Ormuz (Persia) and Diu (India) in the early 1500s. Shortly afterward, what became known as "Indian peppers" or "Calicut peppers" appeared in the Balkans and in Germany, traded from Turkey. They were considered to be another one of the spices of the East Indies, and were called "peperi" or "piperi" by the Greek and Balkan people; they finally found their European home in Hungary, where the far-traveled fruits became the sweet spice powder known as paprika.

I have gone through this reconstruction of the spread of the "chili-pepper" because it is truly amazing. The evidence seems to be clear: that in 51 years from 1492, when Columbus found the "aji" in Hispaniola, to 1543 when Fuchs in Germany published a treatise that described the "Indian or Calicut" peppers newly arrived from the East, the plants had spread from North and South America, not just to a few palace gardens and herbariums in western Europe, but to common cultivation in Africa and India, and back to eastern Europe, and were competing with the "true pepper" in its own stronghold.

One can ask why these peppers spread so far, so fast. Long ago, when I learned in high school about the "spice trade," my schoolbooks told me (rather superciliously, I see now) that Europeans yearned for spices because they covered up the bad taste of rotten meat. I never quite believed that story; no good cook would do such a thing. A better story was told to me by an Indonesian Moslem friend, from Sumatra. His story was that when one went on the Haj (the trip to Mecca) on a sailing dhow, one had to carry all of one's own food along for the entire trip, and that peppers were added in large quantities to prevent the cooked food from spoiling. Having eaten without

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ill effect the phenomenally peppery food that is kept and served luke-warm in Sumatran Moslem street-corner restaurants (and then gotten sick on food in the same country served in highly "sanitary" western-style hotels), I am tempted to believe him. Either the peppers kill the germs, or at least keep the flies away.

An alternative explanation was given by the Jesuit Father Jose de Acosta, in the latter part of the 1500s: "When Axi is taken moderately, it helps and comforts the stomacke for digestion: but if they take too much, it hath bad effects, for of its self it is very hote, fuming, and pierceth greatly, so as the use thereof is prejudiciall to the health of young folkes, chiefely to the soule, for that it provokes to lust." With a recommendation like that, no wonder the use spread!

At any rate, these hot (i.e., irritant) chemicals, whether they come from **Piper nigrum** or from the **Capsicum** species, seem to be instant favorites in the diets of people in tropical lands. The hot **Capsicum** peppers compete successfully with the **Piper** "true peppers" because they are more widely adapted, easier to grow, and produce abundantly even in the first year. One doesn't have to be an oriental potentate to enjoy a **Capsicum** pepper.

All of this would imply that all members of the genus are hot. They are not. The sweet, non-fiery pimento, the crisp and mild green bell pepper, the hot but well-flavored Anaheim chili are all in the same species (**Capsicum annuum**) as are the serrano, the Jalapeno, the cayenne, and that essence of concentrated hotness (with little other flavor) the Thai pepper. While peppers provide the active ingredient of MACE, they also provide a safe red color for other foods!

Most **Capsicum** peppers are easy to grow in southern California. The seeds take a bit more heat to germinate than do tomato seeds; otherwise the care is similar. I have grown several kinds of bell peppers, plus Anaheim chili, Santa Fe Grande chili, Chili Jalapeno, Chili Serrano, Yellow Banana, Thai peppers, Sweet Pimento, and Cayenne -all with good results. There are hundreds of varieties that I have yet to try.

Much of the above information was obtained from a most remarkable book, "Peppers: The Domesticated Capsicums," by Jean Andrews (University of Texas Press, 1984), which discusses the history, botany, economics, and culinary use of these remarkable plants; the book is illustrated by magnificent color plates drawn by the author.

*George C. Shor, Jr. is a professor of Geophysics at Scripps Institution of Oceanography, and a very enthusiastic gardener of vegetables.*

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# Rancho Santa Ana Botanic Garden To Make Historic Exchange with Museum of Natural History, Supported By Major Grant

Rancho Santa Ana Botanic Garden and the Natural History Museum of Los Angeles County have signed an historic agreement to exchange museum plant specimens and consolidate their botanical collections, it was announced by Dr. Thomas S. Elias, director of the Botanic Garden.

The exchange will strengthen both institutions and facilitate research in systematic and evolutionary botany in California. The Botanic Garden has requested a $137,000 grant from the National Science Foundation to support this scientific exchange.

"This will place the Garden among the top eight institutions housing botanical collections in the United States," Dr. Elias stated, "after the Smithsonian Institution and other similar, large museums.

There are approximately 800,000 museum specimens currently housed at the Garden, making it the third largest Herbarium in the western U.S. The collection will grow to over one million specimens once the Museum's collections are incorporated. It contains the world's largest holdings of southern California plants and one of the most extensive groupings of plants from Baja California and mainland Mexico.

The consolidated collections will result in programs at the two institutions which will be complementary. The Botanic Garden collection will concentrate on plants with a vascular system, that is, all flowering plants, conifers and relatives, and ferns, while the Natural History Museum will concentrate on the non-vascular plants — particularly algae, fungi, mosses and lichens, making it the leading institution in the Southwest for such material. The Botanic Garden will transfer approximately 20,000 specimens to the Museum.

The National Science Foundation grant of $137,000 will be used to purchase and install 100 new steel cases on moveable carriages to house the influx of new specimens. The grant is expected to be activated about May 1, 1987 and the transfer of specimens is expected to occur over the next 18 months.

The Rancho Santa Ana Botanic Garden's Herbarium, unlike the majority of the Garden, is not open to the public. It is used by the Garden's staff scientists and visiting scientists for research, and also plays an important role in the Claremont Graduate School's program in Botany in which the students work with Garden staff in pursuit of advanced degrees.

The Rancho Santa Ana Botanic Garden is celebrating its 60th anniversary this year and is located in Claremont, about 25 miles east of downtown Los Angeles, at 1500 N. College Avenue. The 85-acre Garden is open to the public free of charge from 8 a.m. to 5 p.m. daily.


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# Book Reviews

By Mary Lou Orphey

**GROWING WITH GARDENING, a Horticultural Therapy Training Manual** by Bibby Moore, HTR, MSW, MEM. 1987 North Carolina Botanical Garden, the University of North Carolina, Totten Center 457A, Chapel Hill, NC 27514. 8½ x 11 in. 289 pages. Paperback $10.00.

Horticultural therapy programs are often used in nursing and convalescent homes, rehab centers, senior centers, hospitals, mental health centers, correctional centers, and sheltered workshops. Gardening can be theraputic.

Projects are listed weekly by months. Materials needed for each project are listed and what to do is described step-by-step. Those living in temperate climates may wish to vary the activities.

Anyone interested in setting up community gardens, teaching children or adults about gardening or embarking on a horticultural therapy program will find this manual extremely helpful.

**TEXAS WILDFLOWERS,** by Campbell and Lynn Loughmiller, Foreword by Lady Bird Johnson. 1984 University of Texas Press, Post Office Box 7819, 78713-7819, 5 3/4 x 8¼ in. 271 pages. Paperback $11.95 and Hardback $22.95.

Anyone who has driven between Odessa and Amarillo when the Bluebonnets, Indian Paintbrush and White Prickly Poppy have spilled their riot of color over the countryside can attest to the beauty of Texas wildflowers.

Many other exquisite wildflowers, flowering trees, cacti, shrubs, and vines are photographed in color and fully described in this handy field guide.

The illustrated glossary includes diagrams on flowers parts, flower symmetry, section through a composite flower head, flower shapes, arrangement of flower on a stem, leaf parts, leaf arrangement, vein pattern, simple and once compound leaves, leaf types, leaf shapes and cactus parts.

Whether planning a trip amongst wildflowers in Texas or simply wanting a chairside trip, let this paperback be your guide.

**CACTI OF TEXAS AND NEIGHBORING STATES,** by Del Weniger. 1984 University of Texas Press, Post Office Box 7819, Austin, Texas 78713. 5 3/4 x 8¼ in. 356 pages. Paperback $17.95 and Hardback $29.95.

This handy field guide is relevant to cacti growing in Arkansas, Louisiana, New Mexico, Oklahoma, and Texas. Included with each entry is a description, color photograph, where it grows and remarks about interesting features. A key is included for identifying unknown varieties.

Learn how to distinguish a true cacti from other similar-looking plants in this informative book.

**TREES OF CENTRAL TEXAS,** by Robert A. Vines. 1984 University of Texas Press, Box 7819, Austin, Texas 78713. 5¼ x 8¼ in. 405 pages. Paperback $12.95.

**TREES OF EAST TEXAS,** by Robert A. Vines. 1977 University of Texas Press, Box 7819, Austin, Texas 78713-7819. 5 1/3 x 8½ in. 538 pages. Paperback $12.95.

**TREES OF NORTH TEXAS,** by Robert A. Vines. 1982 University of Texas Press, Box 7819, Austin, Texas 78712. 5 1/3 x 8½ in. 466 pages. Paperback $12.95.

The author of these field guides was the director of the Houston Arboretum and Botanical Garden.

All three volumes follow the same format. In each one, the geographical area is defined and geological history is described. Soil and climate conditions are included.

Trees are grouped by family. A branch plus a seed or flower of each tree is illustrated. Field identification, flower description, fruit, leaves, twigs, bark, and general remarks provide the background for identifying trees growing in Central, East or South Texas.

In addition to a glossary, there are illustrations of inflorescence, leaf apices, leaf margins, and leaf forms.

These excellent field guides are invaluable aid for students and others interested in learning about the native and naturalized trees of Texas. Since many of these trees grow in other parts of the country, these reference books become relevant to people in a larger geographical area.

**ROADSIDE FLOWERS OF TEXAS,** by Mary Motz Wills, Text by Howard S. Irwin. 1961 University of Texas Press, Box 7819, Austin, Texas 78712. 5½ x 8¼ in. 295 pages. Paperback $12.95.

Mary Matz Wills was a noted water colorist whose paintings are in Texas Memorial Museum, the Whitte Museum, and in personal collections. She specialized in Texas wildflowers. Over 250 reproductions from these sources have been compiled in this fifth paperback printing of Texas roadside flowers.

Following the reproductions are keys to assist in identifying Texas wildflowers. After the key are detailed descriptions of each plant, arranged by family. There is an illustrated glossary.

Watercolor paintings of flowers have a special charm, and these are no exception. The text is specific in its descriptions, and the keys helpful to the amateur botanist.

**GARDENER'S GUIDE TO AUSTRALIAN PLANTS,** by Gwen Elliot. 1985 Hyland House Publishing Pty Limited, 10 Hyland Street, South Yara, Melbourne, Victoria 3141. Exclusive Distributor, ISBS, Inc., 5602 NE Hassalo St., Portland, OR 97213 7¼ x 10¼ in. 241 pages. Hardback $24.95.

Answers to most questions about Australian nature plants can be found in this mini-encyclopedia.

Section 1 includes information on soil preparation, planting, watering, mulching, fertilizing, pruning, pests, diseases, nutritional disorders, and drought. There are charts of plants for wet areas, wind protection, useful screening plants, embankment and erosion control, and coastal areas. There are chapters on growing annuals, ferns, orchids, and propagating Australian plants from seeds, cutting, and other methods.

Section 2 contains descriptions of hundreds of Australian plants. A cultivation code helps the reader decide if a plant is suitable for its intended use.

This informative book provides a general overview of gardening with Australian plants.

**THE WEEKEND GARDENER,** by Peter McHoy. 1985 Harper & Row, Publishers, Inc., 10 East 53rd Street, New York, New York 10022. 8½ x 11¼ in. 192 pages. Hardback $19.95.

Have you ever considered adding a patio, some new garden beds, or making other changes in your garden design?

"The book has been written in the belief that you can improve your garden, no matter how modest its size or how restricted your purse, if you plan carefully and think constructively about what you want and how to achieve it."

Photographs and diagrams explain concepts and aims of good garden design. One begins by analyzing the site and learning how to draw up a plan. The four major sections are Garden Elements, Garden Plans (actual sample designs), Plants (zoned for North America), and Techniques (advice for do-it-yourselfers on how to build).

The Weekend Gardener is a practical book. Even those who have difficulty visualizing a finished project will find it helpful.

**DIRT,** by John Anthony Adams, 1986 Texas A&M University Press, Drawer C, College Station, Texas 77843. 5½ x 8½ in. Paperback $11.95. 160 pages.

Don't say "Why would I want to read a book about dirt?" because DIRT is a fascinating book.

Find out if your roto-tiller is compacting your soil and how off-road vehicles damage desert sands. Did you know that skin tests indicate over half the residents of California have been exposed to Valley Fever and there is no known cure?

We learn of past misconceptions about dirt, nature's ability to change rock into soil, how peat bogs have preserved bodies for many centuries, erosion, the evolution of the plow, sour soils and acid rains, and types of soils.

Practically all gardeners toil with dirt; we amend it, put water on it, pull weeds from it, put plants in it; so it is time we knew more about it. Anyone interested in soils, plants, man's ingenuity and the environment will enjoy DIRT.

**WYMAN"S GARDENING ENCYCLOPEDIA,** by Donald Wyman. 1986 Macmillan Publishing Company, 866 Third Avenue, New York, N.Y. 10022. 6 3/4 x 9 1/2 in. 1221 pages. Hardback $50.00.

Dr. Wyman was the horticulturist at Harvard University's Arnold Arboretum for over thirty years and is the author of other books. This encyclopedia is the new expanded second edition since first being published in 1971. It contains 9500 different plants arranged alphabetically by scientific names and cross-referenced by common names. There is advice on various aspects of gardening. Black and white illustrations and photographs are included to explain certain points.

Every serious gardener needs an encyclopedia for general information and to find answers to specific questions. This volume would make a fine addition to a gardener's library.

**GARDENS OF NORTH AMERICA AND HAWAII,** by Irene and Walter Jacob. 1985 Timber Press, 9999 SW Wilshire, Portland, Oregon 97225. Exclusive Distributor, ISBS, Inc., 5602 NE Hassalo St., Portland, OR 97213. 6½ x 9½ in. 368 pages. Paperback $24.95.

This handbook lists over 1400 gardens, aboreta and conservatories in the United States and Canada.

Listed alphabetically by state and province, there is a map showing where each garden is located. A short description is included along with admission price where applicable, a phone number, and the hours open.

It is often enjoyable to visit gardens open to the public when travelling, but it is difficult to find out ahead of time where they are located and when they are open. This handbook will solve those problems.

**BEGINNERS GUIDE TO GROWING PHALAENOPSIS ORCHIDS,** by Bob Gordon, Illustrated by Irina Gronborg. 1986 Laid-Back Publications, 276 East Shamrock, Rialto, CA 92376. 8½ x 11 in. 38 pages. Paperback $6.95.

Need some encouragement to buy that beautiful blooming orchid you passed by last week? In this easy to read, easy to understand guide, there is enough information to help even the most timid new orchid owner.

The author divides and conquers: In the Beginning (general and specific cultural needs), After a Little Practice, Regular Care They Need, Where to Grow Them, Showing Them Off, What Did I Do Wrong, and Now What?

Learn how to raise orchids as houseplants, but read Bob Gordon's book before racing down to your favorite garden center.

**ORCHIDS** from Curtis's Botanical Magazine, edited by Samuel Sprunger. Introduction by Phillip Cribb. 1986 Cambridge University Press, 32 East 57th Street, New York, N.Y. 10022. 9 x 12½ in. 525 pages. Hardback $150.00.

This exquisite book contains all of the 1976 hand-colored orchid plates published by Curtis's Botanical Magazine between 1787–1948.

The scientifically exact reproductions include orchids from all continents, wild orchids, and those most often seen in cultivation. All orchids were drawn from real life; since 1841, many of those included were grown at the Royal Botanical Gardens at Kew.

The plates have no text but have the currently accepted scientific names and are arranged alphabetically by generas.

As one looks with pleasure at these beautiful plates, one is awed by nature's beauty and man's ability to capture it on paper.

**GARDEN PLANTERS,** by Diana Saville, Illustrated by Fenja Gunn. 1984 Viking Penguin Inc., 40 West 23rd Street, New York, New York, 10010. 7¼ x 9¼ in. 112 pages. paperback $9.95.

This handy book is a guide for personalizing one's garden space into the style of garden for which our English cousins are noted.

Approximately 650 plants are illustrated in detail and are the ones most commonly found in garden centers in England. Many are suitable for climates in North America and are available here.

Plants for Terraces and Courtyards, Plants for Beds and Borders, and Plants for Hedges and Backgrounds are the three basic subjects discussed. Eight detailed plans for special sites, such as Small and Narrow, Dark and Dank, Open Expanse of Paving, Cottage Gardens, and others are included.

The advice on combining plants for a pleasing effect will be most helpful to those interested in improving their garden's design.

**TUSSIE MUSSIES: Victorian Posey Holders,** by Jeri Schwartz. 1987 Tussie Mussies, Box 271, Hartsdale, New York 10530. 6 x 9 in. 26 pages. Paperback $7.95.

Tussie Mussies were vase-shaped containers made of silver, bone or other suitable materials. They were popular during the Victorian Era and were either held in a lady's hand, clipped to her waistband or placed on a table. Filled with flowers or herbs, they were a personal adornment.

This attractive catalogue shows a variety of Tussies Mussie. It explains the history and usage behind this charming custom. The catalogue describes how collectors use Tussie Musssies today and what to look for when buying one.


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**AN AUSTRALIAN HERBAL,** by Penny Woodward, 1986 Hyland House Publishing Pty Limited, 10 Hyland Street, South Yarra, Melbourne, Victoria 3141. Exclusive Distributor, ISBS, Inc., 5602 NE Hassalo St., Portland, OR 97213. 7 x 10 3/4 in. 171 pages. Hardback $29.95.

More than 220 herbs are included in a chart about their propagation and cultivation. It describes distances to plant apart, type of soil needed, position, height and growth habit, flower color, description of foilage, use and general comments.

The chapter on companion planting is of particular interest. Chervil is a good companion for radishes, increasing the vegetable's growth and flavor. Parsley does not grow well with mint, but grows with chives, roses, or tomatoes. Aphids dislike parsley. Thyme repels cabbage worms. Don't plant garlic near strawberries, cabbage, peas, or beans; but garlic will help protect peaches from peach leaf curl. These are only a few examples of companion planting described in this fascinating chapter.

Information on harvesting, preserving and storing herbs is included as well as recipes using herbs in the kitchen. There are charts showing the culinary use of herbs and dying with herbs. Around 170 of the most common herbs are described in detail as to their growing habits, propagation, and other useful information.


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# Insect-eating Plants in Your Home

By Tineke Wilders

One of the most mysterious and bizarre group of plants is the carnivorous, meaning they feed themselves insects in a variety of ways.

These "meat-eating" plants have always played a role in our history and mythology. In 1581, a Captain Arkright learned of an atoll in the South Pacific where the Death Flower grew, a flower so large that a man might enter it and be devoured by the plant.

In 1878, Dr. Carle Liche claimed to have seen a man-eating tree in Madagascar.

Carnivorous plants have also played a part in science fiction. One of the best examples is The Day of the Triffids, a book and a film about man-eating plants. Even now there is still some mystique about this peculiar family of plants.

### Venus's Fly Trap

In the moving traps, such as the Venus's Fly Trap, scientists have found nerve action, similar to that of animals, yet it is still not precisely known exactly how they move.

### Grow Your Own

Most carnivorous plants are native to the Bog lands of North Carolina, where the soil is nitrogen-poor. Since plants cannot grow without this important nutrient, this group of plants has found its own way of survival: trapping insects and digesting their nitrogen-rich bodies.

Why not grow some of these plants in your own home so you can watch these "smart" plants capture their prey!

Carnivorous plants can be divided into three groups: the active traps, semi-active traps and passive traps. The best known active trap is the Venus's Fly Trap **(Dionaea muscipula),** that contrary to its popular name, lives more on large ants than on flies (in their natural habitat, that is). In the home, they will feed on fungus gnats, fruit flies and house spiders. The fly trap has three trigger hairs in the inside of each trap. As soon as these are touched by a moving visitor, the trap is immediately alarmed. When the hairs are touched again, the trap will close swiftly. The teeth form a kind of a cage which encloses the victim. Small insects can still crawl out, but the larger insects are permanently caught. (It would take the plant more energy to digest a small insect, than can be gained from devouring it!)

### Liquid Enzyme

After catching the insect, the trap now fills itself with a liquid digestive enzyme, thus drowning its victim. The digestion then starts drowning its victim. The digestion then starts to take place, a process that could take up to a week. The trap will re-open and (in nature) the wind or rain will wipe away the remaining insect skelton.

Each trap of the Venus's Fly Trap has a life span of three to four closings. After that it will turn black and die. New traps will be grown by the plant.

Venus's Fly Traps are grown from bulbs, but can also be grown from seeds (they produce white tiny flowers on a tall stem).

Grow the fly trap in a sunny place with a high humidity. A terrarium is an ideal environment, since the humidity is constant and high, but it should be kept out of the direct sunlight.

When you buy a Venus's Fly Trap, they are usually packed in sphagnum moss that should be kept moist at all times. There is no need ever to repot, since they prefer to grow in this type of medium.

Semi-active traps are the Sundew plant **(Drosera** species) and the Butterworts (**Pinguicula** species). Both these plants produce a sticky fluid on tiny hairs on their leaves that act like tentacles. The leaves move up to form a cup to hold the digestive fluid and the caught insect.

### Form Funnel

Passive traps are the Pitcher plants **(Sarracenia)** and the Cobra Lillies **(Darlingtonia).** They have a formed funnel, filled with a liquid nectar, and attract insects by means of its sweet irresistible fragrance. The insect drowns and the plant slowly digests the insect. So chances are that if you grow a few of these plants in your home, unwanted flies and other creepy-crawlies will be kept to a minimum. Besides that, these plants are fun to grow and to watch!

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Compiled by Penny Bunker

**BEGONIAS** Margaret Lee

**feed** begonias to keep them blooming.
**check** for insects, snails, slugs, and fungus.
**check** for mildew and spot spray to eliminate.
**pot** rooted leaves and cuttings.
**repot** to next pot-size if necessary.
**feed** tuberous begonias with Hi-Bloom — one tablespoon per gallon of water plus fish emulsion same amount to water

**BONSAI** Dr. Herbert Markowitz

**check** dampness — water those plants that need it — some perhaps as often as two or three times a day.
**protect** some plants by moving into a shaded area out of the direct sun.
**check** for insects and pests; spray with a diluted spray.
**stop** transplanting or repotting except in emergency situations.
**rotate** your trees in regard to sun exposure.
**keep** debris, weeds, dead leaves cleaned out.

**BROMELIADS** Mary Siemers

**protect** your plants from burning during the hot summer months by keeping them under lath, shade cloth or other material that will provide plenty of light, but not direct sun. Some hobbyists keep them under trees satisfactory. Few bromeliads can take direct sun.
**water** preferably in the evening or early morning. The frequency depends on the weather in your area. Fill the cups at each watering and let it overflow the leaf bases and media. Never allow the plant media to remain soggy.
**maintain** humidity by wetting surrounding areas - humidity is important in the well-being and growth of bromeliads.
**continue** fertilizing through the summer months — using water soluble fertilizer once a month using ½ strength. Be sure to water plant thoroughly before fertilizing.

**CACTI & SUCCULENTS** Frank Thrombley

**continue** feeding schedule — using ½ strength recommended.
**take** cuttings and pups. Let cut heal or scar over before planting.
**transplant** those plants that have been in their containers for some years.
**check** for pests such as mealybugs, aphids, etc. Spray with Malathion or Safer Soap. Safer Soap also cleans the plant without leaving a residue.

**CAMELLIAS** E.C. Snooks

**apply** the third and last hi-nitrogen feeding for the year. Thereafter, give low nitrogen if any.
**prune** unwanted new growth to maintain the shape of your plant. Remove interior criss-cross branches and weak spindly growth to open up for air.
**start** disbudding to provide better quality blooms.
**spray** for mites if necessary. Watch for snails.
**maintain** adequate watering program to maintain growth and bloom bud formation. Never allow plants to dry out.
**propagate** by rooted cuttings or by air layering. Summer grafts may also be made at this time using cleft or bark techniques.

**DAHLIAS** Abe Janzen

**continue** regular watering program.
**tie** canes to prevent plants breaking, using the loop for each cane.
**disbud** to encourage better blooms.
**spray** for insects and mildew; control slugs and snails.
**feed** with a 5-10-10 fertilizer. Use potash alone to help promote root growth.
**keep** old blooms cut back to first set of leaves from the main stalk to prolong blooming.
**cut** blooms in late afternoon or early evening and place immediately in water.

**EPIPYLLUMS** Frank Granatowski

**fertilize** plants that have completed their blooming cycle with fish emulsion, slow release nitrogen fertilizer or any good balanced fertilizer. DO NOT overfeed.
**remove** spent blooms and unwanted apples, in order to conserve the plant's vitality.
**transplant** to larger containers, plants that have outgrown their present container, move to the next size, or a bit larger.
**plant** new cuttings during the warm weather to allow new growth to become established during the growing season.

**water** hybrids during the hot summer months, spray occasionally or mist. DO NOT allow soil to completely dry out.
**maintain** plants in their proper environment, such as a lath house, under shade cloth, or suspend them under the branches of trees. Avoid the direct exposure to the summer sun.

**FERNS** Ray Sodomka
**remove** dead fronds.
**plant** fern fronds.
**water** and maintain humidity by keeping surrounding areas damp.
**fertilize** plants regularly as they are in their growing period. Use a high-nitrogen fertilizer.
**spray** for aphids and scale; keep snails, pillbugs, and slugs under control.

**FUCHSIAS** William Selby
**spray** for insects following the instructions of material.
**fertilize** regularly with a balanced food for bud and bloom; use one-quarter strength once a week.
**mist** during the hot days early mornings or evenings; do not wet during heat of day or those in sun — moisture on plants can burn.
**keep** soil in baskets and containers moist but NOT wet. Do not overwater.
**rotate** plants and prune lightly after blooming to shape and encourage more blooms for fall.

**GERANIUMS** Carol Roller
**water** thoroughly when plants become relatively dry. Each watering should moisten the entire soil ball. Excess water should drain away. Keep foliage as dry as possible.
**continue** feeding with a balanced fertilizer dissolved in water, using at less than the recommended strength, as often as needed to keep the plants from developing nutritional deficiencies.
**continue** pest and disease control using products according to the manufacturer's directions.
**groom** plants, removing discolored leaves and faded flowers. The long bloom stalk on regals and scenteds should be cut away with a sharp blade.
**take** cuttings from zonals and ivy-leaf types, if desired. Each cutting should have a healthy growing tip.
**protect** tender plants from the hot sun; if temperatures are high, move to a sheltered spot or create overhead shade.
**continue** to rotate plants on a regular basis in order to keep them well-shaped.

**GESNERIADS** Michael Ludwig
**water** regularly; do not allow to dry out as they may go dormant.
**keep** plants blooming by removing dead flowers.
**protect** plants from sun. Try to keep temperatures below 90° F. in growing areas.
**take** proper action against pests.

**IRIS** San Diego-Imperial Co. Iris Society
**keep** iris beds clean and free of old fans and weeds.
**revitalize** planting areas by working humus into the soil.
**divide** and replant tall-bearded iris, discarding old spent rhizome.
**dust** ends of cut rhizomes with soil sulphur.
**cut off** foilage of spurias, but do not dig until September.
**watch** for aphids; use a slight insecticide or a systemic.

**ORCHIDS** Charlie Fouquette
**spray** and mist on hot dry days. Keep the mix moist on outdoor plants. Don't be fooled by cloudy days.
**maintain** a regular program against pests — watch for red spider, scale, and/or aphids.
**feed** a high-nitrogen fertilizer to cymbidiums, cattleyas, and nobile dendrobiums.
**give** cymbidiums plenty of water and sunlight, but do not let them burn.
**keep** paphs moist; repot after bloom.
**mist** seedlings in the morning so they are dry by nightfall.


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**repot** seedling phals and make cattleya divisions.
**avoid** sudden temperature changes when plants are in spike.

ROSES Frank Hastings
**feed** with a balanced fertilizer once a month, watering the day before. Be sure to water in if using a dry fertilizer.
**spray** with Orthenex weekly to prevent mildew, rust and thrips from discoloring your blooms. Water the day before to prevent leaf burn.
**wash** under every leaf with a jet stream of water to dislodge any spider mites. Do this weekly the day before you spray.
**water** at least twice a week 18" deep; water every other day if temperature reaches 90°.
**keep** spent blooms pruned.
**prune off** twiggy growth in August for better autumn bloom.
**keep** rose beds clean by weeding and picking up fallen leaves.
**bring** your mulch back to 2" deep if dissipated.

VEGETABLES
**transplant** started celery plants to the garden.
**set** plants of eggplant, tomatoes, and peppers.
**make** a late planting from seeds of snap beans, pole, and bush beans, summer squash, corn, cucumber, carrots, beets, radishes, and turnips.
**harvest** vegetables frequently while they are young and quality is best.
**irrigate** in furrows by flooding, or drip, instead of sprinkling, so the water penetrates deeply. A strong root system is developed and plants are better able to stand hot weather.

GREEN THUMB Penny Bunker
**plant or divide** Shasta daisies.
**plant** for all bloom — calendulas, cornflowers, stock, snapdragons, zinnias.
**pinch back** chrysanthemums once again.
**move** belladonna lilies only after they have bloomed.
**feed** bird-of-paradise with cottonseed meal. Soil sulphur may also be applied to base of plant. Need excellent drainage and acid type soil.

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1st Mon. S.D. Zoo, Rondavel Rm., 11:30 a.m.

**CONVAIR GARDEN CLUB**
Pres: Mrs. Virginia Soderberg 582-7098
6197 Arno Drive
San Diego, CA 92120
1st Wed., Casa del Prado, 7:30 p.m.

**CORONADO FLORAL ASSOCIATION**
Pres: Barbara Perkins 435-8822
840 Balboa
Coronado, CA 92118
Twice annually at call of President,
1113 Adella Ave., Coronado, 7:30 p.m.

**CROWN GARDEN CLUB, CORONADO**
Mrs. John Watson (619) 435-3315
311 Ocean Blvd.
Coronado CA 92118
4th Thurs., Coronado Library, 9:00 a.m.

**DOS VALLES GARDEN CLUB**
Mrs. Jay E. Adams (619) 749-1979
27062 Banbury Drive
Valley Center CA 92082
2nd Tues. (except July and August)
Valley Center Community Hall
Lilac Road and Valley Center Road
Valley Center, CA 1:00 p.m.

**EAST COUNTY ROSE SOCIETY**
Pres: Kay Gray
561-4192
8124 Royal Park Lane
El Cajon, CA 92021
1st Sun., various gardens, 2:00 p.m.

**ESCONDIDO GARDEN CLUB**
Pres: Mrs. Joseph C. McCormick 747-1366
1013 North Midway Drive
Escondido, CA 92027
3rd Fri., Joslyn Senior Center 1:00 p.m.

**EXOTIC PLANT SOCIETY**
Pres: Miss Cynthia Drake 271-8933
11121 Saunders Court
San Diego, CA 92131
4th Tues., Wells Rec Center
1235 E. Madison, El Cajon, CA 7:30 p.m.

**FALLBROOK GARDEN CLUB**
Pres: Mr. Dale McNeice 723-9515
P.O. Box 1702
Fallbrook, CA 92028
Last Thurs. each month except 3rd Thurs.
Oct., Nov., Dec., St. Peter's Church 10 a.m.

**FLEURS de LEAGUE, LA JOLLA**
Pres: Mrs. Lee Monroe 222-8199, 226-8881
851 San Antonio Place
San Diego, CA 92106
2nd Mon., Home of Members, 10:30 a.m.

**GROSSMONT GARDEN CLUB**
Pres: Mrs. Dolores Smith 464-2457
7443 Orien Avenue
La Mesa, CA 92041
2nd Mon. 4975 Memorial Drive
La Mesa, CA 92041, 9:30 a.m.

**HEARTLAND AFRICAN VIOLET SOCIETY**
Pres: Mr. Jim Buchanan 442-7037
233 Noden Street, El Cajon, CA 92020
3rd Thurs. 7 p.m. Home Savings,
396 No. Magnolia St., El Cajon, CA 7:00 p.m.

**HERB SOCIETY OF SAN DIEGO**
Pres: Mrs. Helen Chandler 745-7713
151 Gayland No. 51
Escondido, CA 92027
2nd Sat. (Except July and August)
Home of members, 11:00 a.m.

**THE HOYA SOCIETY INTERNATIONAL, INC.**
Memb. Chmn: Christine M. Burton
Box 54271
Atlanta, GA 30308

**ICHIYO SCHOOL OF IKEBANA SAN DIEGO CHAPTER**
Mrs. Haruko Crawford 465-3046
10411 San Carlos Drive
Spring Valley, CA 92077

**IKEBANA INTERNATIONAL CHAPTER 119**
Pres: Mrs. Rex (Kay) Yarnell (619) 435-0910
501 Country Club Lane
Coronado CA 92118
4th Wed., Casa del Prado, 10:00 a.m.

**IKENOBO CHAPTER OF SAN DIEGO**
Pres: Mrs. Charles Oehler 278-5689
2822 Walker Drive
San Diego, CA 92123

**INDOOR CITRUS AND RARE FRUIT SOCIETY**
Pres: Walter Doty (415) 948-3171
176 Coronado Avenue
Los Altos, CA 94022

**INTERNATIONAL AROID SOCIETY**
Pres: Bruce McManus (305) 271-3767
11691 SW 93 Street
Miami, FL 33176

**LA JOLLA GARDEN CLUB**
Pres: Mrs. Robert H. Van Kirk 459-2825
7821 Boulevard Place
La Jolla, CA 92037
3rd Tues., La Jolla Woman's Cl., 1:30 p.m.

**LA MESA GARDEN CLUB**
Pres: Mrs. Thomas M. Early 460-7831
5705 Urban Drive
La Mesa, CA 92041
3rd Thu., La Mesa Woman's Club
5220 Wilson St., La Mesa 1 p.m.

**LAS JARDINERAS**
Pres: Mrs. Lionel U. Ridout 296-0667
3880 Henry Street
San Diego, CA 92110
3rd Mon., Home of members, 10:30 a.m.

**LATE BLOOMERS**
Co CH Cynthia Jackson
23500 Bell Bluff Truck Trail
Alpine, CA 92001
4th Tues., home of members 9:30 a.m.

**NATIONAL CHRYSANTHEMUM SOCIETY, INC., USA**
Sec: Galen L. Goss
5012 Kingston Drive
Annandale, VA 22003

**NORTH COUNTY ROSE SOCIETY**
Pres: Mr. Dale Reece (619) 757-5905
352 Leeward Court
Oceanside, CA 92054
222 Jefferson St., Vista, CA Fri. 7:00 p.m.

**NORTH COUNTY SHADE PLANT CLUB**
Pres: Mrs. Druscilla C. Luers 439-3677
1635 Mt. View Avenue
Oceanside, CA 92054
3rd Sat. Ecke Bldg., Quail Gardens
Encinitas, CA 1:00 p.m.

**OHARA SCHOOL OF IKEBANA LA JOLLA**
Pres: Mrs. Donald Davis 672-0128
11211 Del Diablo Street
San Diego, CA 92129

**OHARA SCHOOL OF IKEBANA SAN DIEGO**
Pres: Mrs. Walter Bourland 276-4667
2936 Havasupai
San Diego, CA 92117

**ORGANIC GARDEN CLUB, SAN DIEGO**
Pres: Mr. John E. Miller 460-8756
1302 Helix Street, No. 52
Spring Valley, CA 92077
3rd Fri., Rm 104, Casa del Prado 7:30 p.m.
Every 2 months starting Jan.

**PACIFIC BEACH GARDEN CLUB**
Pres: Mrs. Raymond E. Smith 488-0830
4995 Fanuel Street
San Diego, CA 92109
2nd Mon., Sep. thru Jun., 1:00 p.m.
Pacific Beach Community Center

**PALOMAR CACTUS AND SUCCULENT SOCIETY**
Pres: Mr. Gene Eisenberg (619) 487-1051
17592 Corbel Court
San Diego, CA 92128

**PALOMAR DISTRICT CALIFORNIA GARDEN CLUBS, INC.**
Dir: Mrs. Alvin F. Putman 749-9587
15665 Fruitvale Road
Valley Center, CA 92082

**PALOMAR ORCHID SOCIETY**
Pres: Ted Pinger 436-2326
457 E. Glaucus
Leucadia, CA 92024
2nd Fri., Vista Senior Citizen Center
7:30 p.m.

**POINT LOMA GARDEN CLUB**
Pres: Myrna Hines
(619) 222-2299
935 Armada Terrace
San Diego CA 92106
2nd Wed., Westminister Presby. Church
Talbot & Canon, 10:00 a.m.

**PROFESSIONAL WOMEN'S HORTICULTURE AND LANDSCAPE ASSOCIATION (PWHLA)**
Pres: Karen Kees 566-3851
P.O. Box 3424
San Diego, CA 92103
4th Wed., Jan., Mar., May, Sep; 1st Wed Nov.

**RANCHO SANTA FE GARDEN CLUB**
Pres: Mr. John Rainsford
Hort. Ch: Corrine Gruenwald
P.O. Box 1696
Rancho Santa Fe, CA 92067
2nd Tues., Rancho Santa Fe Garden Club
Avenida de Acadias, Rancho Santa Fe
7:30 p.m.

**SAN CARLOS GARDEN CLUB**
Pres: Mrs. Wendell W. Bemis 465-6834
7808 Lake Adlon Drive
San Diego, CA 92119
4th Tues., Home of Members, 9:30 a.m.

**SAN DIEGO ASSOCIATION OF PROFESSIONAL HORTICULTURISTS**
Pres: Miss Cynthia Drake 271-8933
11121 Saunders Court
San Diego, CA 92131
4th Mon., Casa del Prado Rm. 104, 7:30 p.m.

**SAN DIEGO BONSAI CLUB, INC.**
Pres: Mr. Stan Childs 583-0562
P.O. Box 40037
San Diego, CA 92104
2nd Sun., Casa del Prado, 1:00 p.m.

**SAN DIEGO BOTANICAL GARDEN FOUNDATION, INC.**
Dr. Herbert A. Markowitz
224-8552
876 Armada Terrace
San Diego, CA 92106

**SAN DIEGO BROMELIAD SOCIETY**
Pres: Mr. Mitchell Gos 422-8557
639 First Ave., Chula Vista, CA 92010
1st Thurs., Byzantine Catholic Church
2235 Galahad Rd., Serra Mesa, 7:45 p.m.

**SAN DIEGO CACTUS & SUCCULENT SOCIETY**
Pres: Mr. Martin Mooney 427-6796
97 K Street, Chula Vista, CA 92011
2nd Sat., Casa del Prado, 1:30 p.m.

**SAN DIEGO CAMELLIA SOCIETY**
Pres: Cynthia Drake 271-8933
11121 Saunders Court
San Diego, CA 92131
3rd Wed., Casa del Prado, 7:30 p.m.

**SAN DIEGO COUNTY BRANCH NATIONAL FUCHSIA SOCIETY**
Pres: Mike Angelo (619) 729-3766
4910 Neblina Drive
Carlsbad, CA 92008
2nd Thurs., Palmquist School
1999 California St., Oceanside 7:00 p.m.

**SAN DIEGO COUNTY DAHLIA SOCIETY**
Pres: Leslie Pickford 278-1083
5350 Via Bello
San Diego, CA 92111
4th Tues., Casa del Prado, 7:30 p.m.

**SAN DIEGO COUNTY ORCHID SOCIETY**
Pres: Mr. David Reid 723-7996
31970 Rockinghorse Road
Escondido, CA 92026
1st Tues., Casa del Prado, 7:30 p.m.

**SAN DIEGO DAYTIME AFRICAN VIOLET SOCIETY**
Pres: Beverly Decker 469-9975
7430 Stanford Ave., La Mesa, CA 92041
2nd Mon., Fellowship Hall, Christ United Methodist Church, 3295 Meade, 12 noon

**SAN DIEGO EPIPHYLLUM SOCIETY**
Pres: Mr. Milton D. Turner 224-0955
2674 Willow Street
San Diego, CA 92106
2nd Wed., Casa del Prado, 7:30 p.m.

**SAN DIEGO FERN SOCIETY**
Pres: Mr. Donald Callard 438-9409
7146 Argonauta Way
Carlsbad, CA 92008
3rd Thurs., Casa del Prado, 7:30 p.m.

**SAN DIEGO FUCHSIA & SHADE PLANT SOCIETY**
Pres: Mr. Bob Matlock 423-0213
1333 New Chatel Drive
San Diego, CA 92154
2nd Mon., Casa del Prado, 7:30 p.m.

**SAN DIEGO GERANIUM SOCIETY**
Pres: Mr. Jim Zemcik (714) 551-3264
15442 Orleans Circle
Irvine, CA 92714
2nd Tues., Casa del Prado, 7:30 p.m.

**SAN DIEGO GESNERIAD SOCIETY**
Ariel Madden (619) 299-5415
211 West Walnut Ave. #6
San Diego CA 92103
1st Thurs., Casa del Prado, 7:30 p.m.

**SAN DIEGO/IMPERIAL COUNTIES IRIS SOCIETY**
Pres: Dorothy Driscoll 463-6700
6338 Lake Athabaska Place
San Diego, CA 92119

**SAN DIEGO ROSE SOCIETY**
Pres: Mr. Coe Applegate 463-3555
3976 Agua Dulce Blvd.
La Mesa, CA 92041
3rd Mon., Casa del Prado, 7:30 p.m.

**SAN DIEGUITO GARDEN CLUB**
Pres: Mrs. Hans (Pam) Kaspar
(619) 753-4087
1905 Hummock
Encinitas CA 92024
4th Wed., Ecke Family Bldg.
Quail Gardens, Encinitas, 10 a.m.

**SAN MIGUEL BRANCH AMERICAN BEGONIA SOCIETY**
Pres: Mrs. Toni Baker (619) 582-7516
6475 - 50th Street
San Diego CA 92120
1st Wed., Casa del Prado, Rm. 104,
7:30 p.m.

**SOGETSU SCHOOL OF IKEBANA**
Pres: Mrs. Leroy Lahey 429-6198
2829 Flax Drive
San Diego, CA 92154

**SOUTHWEST GROUP, JUDGES COUNCIL**
Chr. Mrs. Edwin R. Gould 475-8996
2111 Rachael Avenue
San Diego, CA 92139
1st Wed., Casa del Prado, 10:00 a.m.

**SOUTHWEST HEMEROCALLIS SOCIETY**
Pres: Mr. C.R. Bowman 273-7937
3927 Sequoia Street
San Diego, CA 92109
1st Sat., Feb., Apr., Jun., Sep., Nov.
10 a.m. Quail Gardens Meeting Room
Quail Gardens Rd., Encinitas

**SUN HARBOR BRANCH NATIONAL FUCHSIA SOCIETY**
Pres: Barney Gonsalves (619) 222-4254
4103 Tennyson Street
San Diego, CA 92107
4th Wed. Recreation Hall, Holy Trinity Church
2083 Sunset Cliffs Blvd., Ocean Beach

**THE WATER LILY SOCIETY**
Pres: Dr. Kirk Strawn (301) 662-2230
c/o Charles B. Thomas, Secretary
P.O. Box 104
Buckeystown, MD 21717-0104
Meeting 19-23, Aug. 1987, Denver Co.

**VILLAGE GARDEN CLUB OF LA JOLLA**
Pres: Dorothy C. Carroll 578-1484
8304 Hydra Lane
San Diego, CA 92126
4th Thurs., La Jolla United Methodist
6063 La Jolla Blvd., La Jolla 1:00 p.m.

**VISTA GARDEN CLUB**
Pres: Mrs. Edward Kelly 726-7789
30032 Disney Lane, Vista, CA 92084
1st Fri., at 222 Jefferson St., Vista
Senior Service Center, 12 noon

**PROFESSIONAL AFFILIATES**

**BENNETT'S GARDEN CENTER**
Attn: Fran Vallera 454-4241
7545 Draper Ave., La Jolla, CA 92037

**GRIGSBY FAMILY LANDSCAPE**
Jim and Kathleen Grigsby
(619) 461-7732
7964 High St., La Mesa, CA 92041

**HORTICULTURIST, LECTURER, AUTHOR**
Bettie L. Furuta (619) 723-8678
2055 Rice Canyon Rd.,
Fallbrook, CA 92028

**LAWSON VALLEY NURSERY**
Clyde & Ann Wahl (619) 445-2934
3616 Rudnick Dr., Jamul, CA 92035

**MASTER LANDSCAPE MAINTENANCE**
Robert Mayberry and Gary Rodriguez
(619) 276-6016
4351 Piper St., San Diego, CA 92117

**SUNSHINE GARDENING**
Ken Fernandes (619) 224-1930
3021 McCall, San Diego, CA 92106

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